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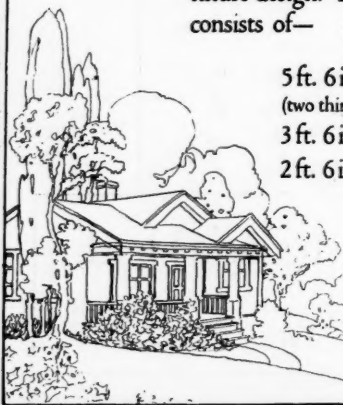


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No. 21.

ETHER ANÆSTHESIA.¹

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In giving anæsthetics so many variations are met with in regard to patients, surgeons, the nature of the operation, the conditions, etc., surrounding the performance of the operation, that from time to time the anæsthetist may modify the methods adopted, all the while working towards safety and simplicity. Any method advocated now is used not because it is without any defects, but because it is considered to be the best of any that may be in use and because it aims at being fool-proof, thus insuring what should be the paramount consideration in anæsthesia, *i.e.*, safety of the patient. It should be remembered that everything that tends to make for easier working of the surgeon, must also tend to insure the safety of the patient.

For this reason the routine usage of chloroform must be passed by; I think this is practically an accomplished fact so far as this city is concerned.

The mode of administration must vary to suit the special operation and for that reason the anæsthetist must be versatile enough to adopt different methods. In this respect I refer especially to intratracheal methods which form the subject of another paper to-night. In certain cases I can conceive of no better anæsthesia and I think I can claim that I have been as early and as persistent an advocate of intratracheal anæsthesia as anyone else in Melbourne. The preference of ether over chloroform was a gradual process with me. In my first thousand cases chloroform was used from beginning to end in the great majority and in most of the others, all in fact in which Clover's apparatus was not used, chloroform was used with the ether. I can therefore claim in advocating the sole use of ether that it is not because I lack knowledge of chloroform. When the use of ether by open methods began to be suggested and advocated, for some reason it seemed beyond one's capabilities to manage without chloroform. Even if ethyl chloride were used, the patient would be out of the ethyl chloride anæsthesia before he was under the ether, consequently chloroform and ether or the "A.C.E." mixtures were used both for induction and from time to time throughout the operation. Perhaps very little chloroform was used in some cases and this was what was indicated when the term "open ether" was used. I may say it was not for want of trying that aids to the ether were used because in the case of patients with bad exophthalmic goitre, whose neck perhaps had been infiltrated with novocaine and adrenalin it seemed quite wrong to use chloroform. Attempts were made to give only ether, but the induction was often so prolonged and the irritation of the upper respiratory passages so pronounced that the use of a little chloroform under these circumstances seemed the lesser of

two evils, and for induction at least chloroform and ether or "A.C.E." was used.

It was all the same whether warm ether vapour were used or not. In 1911 Dr. Dunhill brought a Gwathmey apparatus from America and very shortly after Dr. Devine brought another. Since that time we have very largely used warm ether vapour and when this apparatus was used, advantage was almost always taken of the chloroform bottle as well as the ether. Here I might say that so-called aids in the form of preliminary medication were also given a trial and they have been discarded as being both useless and harmful. I could not be convinced of any advantage in aiding anæsthesia. If sufficient morphine be given to bring about the vaunted results, there must be a corresponding degree of effect on the medullary centres of circulation and respiration. To me the respiration is the main guide during the whole stage of anæsthesia and anything which interferes in any way with it, may affect the safety of the patient. I would infinitely rather have the whole anæsthetic state of the patient due to a volatile and rapidly eliminated drug than have only part due to this drug and the other part due to a drug more or less fixed for the time being. It was also found that the induction, instead of being facilitated, was generally delayed in that the patient would dose off long before anæsthesia was produced and would require a rude awakening by the surgeon's knife in many cases in order to persuade him to breathe deeply enough to be anæsthetized.

In an article I have to hand I would like to read a short paragraph. It is by Dr. Embley, who I regret to say was unable to give a short paper to-night.

Morphine depresses respiration to a degree which varies widely with individuals and with animals. This is especially seen when used in conjunction with chloroform or ether, in a small percentage of which cases it occurs to a marked extent. When such instances occur in conjunction with chloroform the phenomenon represents absolute failure of respiration extending over a period of even three hours. With ether the depression is not so complete, but it is so much as to reduce the rhythm to even as few as three or four deep respirations per minute. The type of respiration thus induced resembles that following vagotomy, except that lung ventilation is not as efficient and consequently mild degrees of anoxæmia may be observed in the more marked instances. This reduced rate of respiration comes on only after cessation of the administration of ether, although milder degrees of slowing may sometimes be observed during the administration of ether by the open method. These unusual phenomena are more apt to occur when morphine is given in one-quarter rather than one-sixth or one-eighth grain doses. Atropine has no counter-acting effect.

Because of what I have just said, I think that both chloroform anæsthesia and open ether anæsthesia are contraindications to the preliminary use of morphine. I am not here concerned with closed ether methods.

It was found, however, that the amount of chloroform used became less and without any alteration in methods patients seemed more amenable to ether, and gradually chloroform was discarded both for induction and during continuance of the anæsthetic. I am

¹ Read at a Meeting of the Victorian Branch of the British Medical Association on March 2, 1921.

quite satisfied that it is a better thing for the patients to have chloroform put completely aside. Ether is given from start to finish and nothing whatever is given to aid it, with the exception of some cases in which the surgeon may specially ask beforehand for some preliminary medication, and of other cases in private hospitals in which for some reasons quite unknown to me preliminary injections are given as a routine. I discover this during the induction and in these cases I certainly do not find it any help.

In adopting this method I have done so partly to see if a fool-proof method could be evolved which would be equally safe and pleasant to the patient and as effective as any other, because I found that in the teaching of anaesthetics there was considerable risk that when the "A.C.E." or chloroform and ether bottle was there for induction, it would be used throughout and it would be chloroform anaesthesia with its consequent dangers to the patient and discomfort to the surgeon owing to frequent halts for artificial respirations. It also seemed to me that it was hardly a fair thing to impose on others and those the ones who naturally would lack the practice, something which I did not carry out. For that reason amongst others I have refrained from using chloroform almost entirely during the last few years. The last bottle I had was bought in June last; that was used up a few months ago, the bulk of it because it happened to be in my bag and as I had used all my ether towards the end of an operation I wanted to keep the patients going a little longer.

The form of mask may vary, as may the cover, but they should be of a kind that all air breathed except in the early stages must pass through the covering of the mask. The smell of the ether can be effectively disguised by addition of oil of orange. We can only judge by effects, but more than one medical man has assured me that he did not recognize it as ether when being anaesthetized in this way.

Anaesthesia is produced as quickly as the mucous membranes will allow. Ether is poured on quite freely but at first the mask is not held firmly on the face. This is done gradually. The anaesthetist must watch all the time for coughing, sneezing, breath-holding, swallowing or anything else which indicates that the vapour is irritating the air passages and if any of these take place, he should give more air and get the patient to keep on breathing regularly. The majority of patients will keep up an even rhythm if given a chance, but some in spite of all we may do, will fight against it, will hold their breath or keep on coughing or swallowing. In these cases, they must be made to cough themselves "under" or swallow themselves "under"; that is we must make induction easy for them if possible. If this cannot be done we should not waste time, but push it straight off and they must go.

Drop methods should be drop methods and not "pour and pause." During induction there should be a gradual increase of depth and not a "come and go" and during maintenance there should be a steady maintenance and not a pendulum-like condition.

For this reason any mechanical device for the even maintenance of anaesthesia is a great asset. Un-

fortunately such apparatus is usually suitable only for hospital work and it is an anomaly that while in the public hospital where I work, we have no such apparatus. We are keenly alive to its value. In another hospital where there is such an apparatus, it has reposed under a sheet for the greater part of its existence.

No matter what anaesthetic is used nor in what the form it is administered, the successful maintenance of the air way is the keynote to success. There is nothing conducive to greater danger than the ignorance of this fact or failure to recognize that such a condition is not being accomplished.

Hewitt writes: "In considering the effects produced by anaesthetics in the human subject, it is impossible to overestimate the importance of the freedom or the want of freedom with which the respiratory current enters and leaves the lungs. Many phenomena customarily ascribed to the direct effects of an anaesthetic upon this or that part of the nervous or circulatory systems are often in reality referable to a greater or less degree of occlusion of the air tract, the presence and effects of which are not realized."

The anticipation of trouble is the best means of preventing it and the majority if not all of the troubles of anaesthesia commence with imperfect freedom of the respiratory passage. Moreover, so many vicious circles can arise that when once the air ways are obstructed from any cause, it often takes quite a while before a happy condition is again established. It is often claimed that ether stimulates the secretion of mucus and thus is a bad anaesthetic. Perhaps it does to some degree, but if the carbon dioxide element is eliminated there is very much less mucus secretion. In fact a great many of the so-called disadvantages to the use of ether are due not to the ether but to the carbon dioxide. Venous engorgement and all it means, want of muscular relaxation, laboured breathing with big respiratory excursion, none of these need be present in the very large majority of cases. The depth of anaesthesia necessary for surgical purposes is consequently much greater when the carbon dioxide element enters into consideration. It may produce muscular rigidity rather than relaxation, so that the patient is pushed until all reflexes disappear and the pupil is fully dilated and fixed, and even then the muscles are hard as boards and the colour is such that there is often a rush for the oxygen cylinder.

If on the contrary the carbon dioxide element be eliminated, the patient looks absolutely normal as regards colour, the breathing is quiet and easy, there is good muscular relaxation and everything seems so good that the anaesthetist only looks at the eyes out of curiosity, if at all, when it is found that the pupils are small and active, and as likely as not a corneal reflex is present.

Just in passing a word as to corneal reflex. I know fine distinctions are made as to corneal or conjunctival reflexes. These are purely academical. To elicit the corneal reflex, advantage is taken of the pool of tears in the corner of the eye to moisten

the finger, which is then brushed sharply across cornea; gently touching or almost touching the cornea will not elicit a reflex which is really present, thus causing confusion.

If the attention be concentrated on the breathing, there is very little requiring further notice. Any variation in the respiratory rhythm is noted and accounted for and the condition causing the variation is eliminated either by reducing or increasing the depth of anaesthesia. If it is due to reflex disturbance from light anaesthesia, the anaesthesia must be increased; if conversely the respirations are being effected by depression of the medullary centre, it must be relaxed. With a perfectly free air way, with no preliminary medication, with ether induction and maintenance on an open mask, in the great majority of cases the method is fool-proof and it is impossible to get the patient too deeply under. But if the carbon dioxide element comes in, it is quite a different story.

The preliminary examination of a patient has never to me borne the importance some would attach to it. What are the conditions contraindicating operation? Certainly not compensated heart bruits, certainly not uncompensated heart conditions, if the operation is for the removal of the cause, certainly not grossly poisoned heart muscles if the anaesthetic is necessary for the removal of the cause. First of all the need for the operation must guide the giving of an anaesthetic and the method I have indicated is very safe at almost any age or in almost any condition.

The question of shock must enter into account in many operations and I think the anaesthetic may have a big influence here. In this connexion some of the present ideas as to shock are of interest in that if we pay attention to the capillary circulation as has long been the custom, a very good idea as to the patient's condition is obtained. After the breathing the capillary circulation should be watched rather than the arterial pulse.

Pink blanching on pressure, with quick return to pink, shows good condition and variations in colour and rate of return after pressure give accurate information both as to shock and freedom of air way. I think shock is more often due to overdosage of anaesthetic than to reflex stimuli from the site of the operation. If the whole system is clogged out with poison, fortunately far less seen now than in the chloroform days, there must be greater likelihood of shock.

We are told that with light chloroform anaesthesia there is danger of reflex stimuli producing auricular fibrillation. This is not so with ether, and it is just another reason for avoiding chloroform. Several surgical procedures are mentioned as requiring deep anaesthesia in order to avoid shock. One of these is dilatation of the *sphincter ani*, a procedure recommended specially to revive an overdosed patient. Others are pulling on the *vas*, section of the optic nerve, or internal *rectus* of the eye. In all these I have purposely maintained very light anaesthesia and there has been no indication of shock.

Pulling on organs in the upper part of the abdomen tends to cause breath-holding in light anaesthesia,

but far less so with ether than with chloroform.

By advocating light anaesthesia I certainly do not advocate a degree of lightness which will not give muscular relaxation.

I know prejudices still exist against ether in certain work. Some nose and throat men claim that only chloroform can give the degree of relaxation required. I can recall one who suggested the insertion of the mouth gag before I started with ether, as sometimes it could not be got in when the patient was under. I managed to get the patient sufficiently anaesthetized to relax the jaw muscles. Still I have not yet succeeded in producing deep enough anaesthetic to insure relaxation of the *cervix uteri*, as was desired by a surgeon colleague of mine. I mention this to show that objections to ether are often based on ideas as to what an anaesthetic should do which are quiet wrong, or on conclusions formed from seeing anaesthetics not properly administered.

As to posture I recommend comfort for the patient during the induction. I use no pillow at all after, for two reasons. It is easier to maintain freedom of the air way and it is the position most favourable for good cerebral circulation. I hold cerebral anaemia is not under any conditions desirable. Of course the position of the patient should be varied in accordance with the nature of the operation.

ANÆSTHETIC NOTES.¹

By R. W. Hornabrook, M.B., Ch.M. (Ade.), M.R.C.S., L.R.C.P.,
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Morphine and Atropine.

I believe for the comfort and safety of surgeon, anaesthetist and patient that the small dose of morphine and atropine is absolutely essential in all operations with the exception of those operations in which there is any question of the base of the brain being involved, when the morphine should be left out and only atropine employed.

Morphine is stimulating, sedative, depressant. If an anaesthetist or surgeon is incapable of handling morphine properly, that is in the small dose, then he had better leave it alone, for if he does use it improperly, then he is bound sooner or later to get into trouble and cause a death to occur from respiratory failure.

Let me illustrate my point. Some years ago I met a surgeon whose patients at the Women's Hospital with which he was connected, all had 0.0075 grm. morphine and 0.004 grm. atropine one hour before operation. He was so pleased with the result that he decided to give the morphine and atropine for his private patients. He told me of this and I said: "Well, look here, sir! If you are going to use morphine and atropine for your private patients, be careful how you do so and avoid both a large dose of morphine and chloroform as the anaesthetic because if you do not, you will for a certainty get into trouble and have a death." His reply was this: "I do not follow you. I do not see why if I can give say 0.015 grm. morphine to a patient in ordinary circumstances,

¹ Read at a Meeting of the Victorian Branch of the British Medical Association on March 2, 1921.

I cannot give the same amount under anaesthesia." My answer was: "I cannot give you the exact reasons, for I do not know them, but I can tell you this that if you do employ the large dose of morphine, you will kill someone and you will be responsible for that death, and yet on the other hand if you employ the small dose of morphine and atropine you will be absolutely safe provided you do not use chloroform as an anaesthetic." Well he went his way—like all big surgeons who think they know something. He used his 0.015 grm. morphine and chloroform and he had two deaths in a private hospital within a few weeks from respiratory failure and then he wanted to and did condemn morphine and atropine. If he had been just and honest, he would have condemned himself. The man who cannot and will not learn, had better leave morphine and atropine alone, be he anaesthetist or surgeon. But to condemn morphine and atropine because he is incapable of handling them, is only to reveal what a lot he has yet to learn. I have advocated and for years I have told the profession that they must stick to the small dose of the morphine and atropine, *viz*: For adult males, 0.01 grm. morphine and 0.0005 grm. atropine, and for adult females, 0.0075 grm. morphine and 0.0004 grm. atropine one hour before operation. For children of both sexes between 8 to 12 years, 0.005 grm. morphine and 0.0004 grm. atropine, and between 3½ and 8 years, 0.003 grm. morphine and 0.0003 grm. atropine.

These results are from many years' close observation and have been largely adopted by many anaesthetists, both in this country and abroad. If the anaesthetist or surgeon thinks he knows better, then well and good, depart from them, but sooner or later he will be caught and have a death, especially if he employs chloroform as an anaesthetic, but he must not blame me or the patient. Let him put the blame where it belongs—on himself—and let him consider that he has passed one more unfortunate into the unknown.

Personally, I have no time for the man who condemns morphine and atropine. I think that the advantages of morphine and atropine entirely outweigh their disadvantages, if properly handled. There is an absolute soothing effect on the patient—a most important point; the lessened quantity of anaesthetic required, for we know to-day that all anaesthetics are tissue poisons and the less anaesthetic required, the better for the patient. The lessening of the chance of broncho-pneumonia from the lessened bronchial secretion due to the atropine; the lessening of shock from both the morphine and atropine; the dryness of the skin after atropine, the warmth of the patient, the lessened anaesthetic used and the lessened risk of post-operative vomiting are all a gain and a distinct gain. I know this: I would permit no anaesthetist, no matter how expert he may be, to give a general anaesthetic to one of my family unless he used morphine and atropine as a preliminary, but it must be in the small dose and again I emphasize that fact. Every leading anaesthetist in England and America has followed me on this point.

As far as the stethoscope is concerned from the

anaesthetist's point of view, it is not worth anything. The anaesthetist who relies on it, will get into trouble sooner or later. It is not the hearts that you hear anything from that go out under a general anaesthetic: it is the heart that you do not; in other words, the sloppy, fatty heart.

If the readers of this journal desire me to continue, I will do so. I know I am unorthodox according to the ordinary rules, but I believe in common sense, and why in Heaven's name a patient should be stood on his head because he is unconscious, I have never been able to perceive. If the Supreme Power intended us to stand on our heads, as many anaesthetists seem to think, when under operation and when back in the wards or going to the wards, then surely He would have given us feet where our hands now are. I believe with Cecil Rhodes in treating "human beings," as he calls them, as human beings. I am very often inclined to think that as surgeons and anaesthetists we look upon our patients as inanimate objects.

GAS-OXYGEN ANÆSTHESIA.¹

By S. O. Cowen, M.D. (Melb.),

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Although nitrous oxide, with or without the admixture of air or oxygen, had been used as an anaesthetic for many years, certain difficulties in the technique of its administration prevented its general adoption for prolonged operations, although it was widely used for induction preliminary to ether or chloroform. The apparatus of Hewitt, who was the pioneer of gas-oxygen anaesthesia, afforded no means of supplying the gases under uniform pressures or of adding ether or chloroform to the mixture, while rebreathing was difficult to regulate.

Fortunately these defects were remedied, mainly owing to the efforts of American workers, before the outbreak of the late war. There was at hand, therefore, an efficient means of administering an anaesthetic eminently suitable for many of the procedures of military surgery. During 1915 and 1916 Boyle (1) demonstrated its qualities in the class of work seen in base hospitals in England. Its general adoption came slowly, however, and not until the end of 1917 did gas-oxygen become widely used in casualty clearing stations where it proved brilliantly successful. Its practicability in this class of work was first demonstrated by Major Geoffrey Marshall of the Royal Army Medical Corps, with whom I had the pleasure of working for some months and it was his persistent advocacy which finally led to its widespread employment.

As no apparatus is available, I do not propose to deal with the technique of the method, but will confine myself to a brief discussion of its qualities and defects as demonstrated in war surgery and its possible field of usefulness in civil work.

Chief among the advantages claimed for gas-oxygen is that it is "the physiological anaesthetic." It merits the title because it enters the blood as a gas

¹ Read at a Meeting of the Victorian Branch of the British Medical Association on March 2, 1921.

and is exhaled having the same composition with the addition of carbon dioxide(2). It is carried in the blood in physical union, causing no chemical or morphological changes and can therefore be completely eliminated in one or two cycles of respiration. This explains its freedom from depressing effects and its suitability for badly shocked patients. Under gas-oxygen there is a slight rise in blood-pressure with some quickening of the pulse rate, the colour improves and the respirations are deep, quick and regular. It was, indeed, amazing to see the improvement of shocked, exsanguinated patients under it. Despite the trauma of operation, the pulse and colour became better and, what is most important, there was very little reactionary depression when administration ceased. In this respect it proved superior to warm ether and oxygen which, though more stimulating, was followed by a much greater "slump."

This freedom from depressing effects renders gas-oxygen a very safe anaesthetic. But, while safe, it is by no means fool-proof. For years it was taught that nitrous oxide is dangerous only when given with too small a percentage of oxygen and that asphyxia is the cause of all deaths occurring under it. It has since been shown, however, to have a direct action on the heart itself, occasionally causing acute dilatation, even when given with oxygen (3). It has no action on the vaso-motor centre nor does it cause irritation of the respiratory tract. Death under gas-oxygen occurs extremely suddenly; I have seen a patient who appeared to be doing well, die, after a few retching movements, within a minute. This was the only death I saw, although it was given in many desperate cases to patients who in civil work would have been considered unfit for any anaesthetic. Its success under such conditions showed it to be the safest of all anaesthetics when given by an anaesthetist thoroughly skilled in its administration. The margin of safety is perhaps smaller than with other methods and, as a number of deaths in civil practice have been reported(4, 5, 6), its lethal possibilities should not be lost sight of.

The rapidity of induction and recovery with gas-oxygen reduced the anaesthetic period to a minimum—a point of great importance in casualty clearing station work. Within a very few minutes after administration had ceased the patient was in full possession of his faculties and was able to ask for the inevitable cigarette. Post-anaesthetic vomiting seldom occurred and, in my experience, was never severe so that the nurses' work was lessened. In cases requiring repeated dressings under general anaesthesia these qualities rendered the method almost indispensable.

The greatest disadvantage of gas-oxygen was the lightness of the anaesthesia produced. Attempts to obtain greater depth by pushing the nitrous oxide only led to cyanosis and increased rigidity. This defect was partly overcome by the addition of ether and by preliminary injections of morphine and atropine and, sometimes, scopolamine. Even with these adjuncts any traction or twisting of a fractured limb was resented, though cutting produced no effect. In abdominal work, infiltration of the wall with novo-

cain was almost always necessary, since gas-oxygen produces no real muscular relaxation. Even with local anaesthesia and the addition of ether, upper abdominal work was not satisfactory. These difficulties were lessened by close co-operation between the surgeon and the anaesthetist, who were, in most teams, on a much more equal footing than generally obtains in civil hospital practice. Each readily accepted the suggestions of the other with great advantage both to themselves and to the patient.

Owing to the quick recovery from anaesthesia, pain, especially after abdominal operations, was more marked than with ether or chloroform. So noticeable was this, that it was often questioned whether gas-oxygen anaesthesia was sufficiently deep to protect the brain from peripheral stimuli during the operation. Crile(7), however, states that it is much more efficient in this respect than ether and certainly the freedom from shock supports his contention.

The further disadvantages were mainly mechanical. The apparatus is cumbersome and weighs, with charged cylinders, about 27 kilograms. Marshall(8) has devised a portable type of about 18 kilograms weight, but even this would not be very convenient in private work.

For hospital work the cost is a serious item. The consumption of gas averages about 273 litres and of oxygen about 114 litres per hour. At current local prices this works out at about £1 an hour. In private work the cost would be 25% greater.

Finally gas-oxygen can only be administered safely and satisfactorily by an anaesthetist who is expert in the technique. This means an addition to the hospital staff since the resident medical officer is not on full anaesthetic duty for a sufficient time to become expert, nor is he on such a footing with the senior surgeons as is essential to team-work and hence to success with this method.

In the light of our war experience, what are the possible uses of gas-oxygen in civil surgery? For desperate cases, whether from toxæmia or traumatism or hæmorrhage, it would be invaluable. Fortunately such cases are not common in civil hospitals but when they do occur, gas-oxygen, if available, might easily tip the scale between life and death.

For operations on elderly people it is strongly indicated owing to its freedom from irritant effects on the respiratory tract.

Coma is stated(9) to be less frequent after operations on diabetics with this than with any other method.

In cases requiring repeated dressings under general anaesthesia and for minor procedures, such as the removal of abdominal plugs, it is by far the best anaesthetic.

On the other hand it is contraindicated in cases where absolute muscular relaxation is required all the time, especially in upper abdominal operations. It is unsuitable for operations in the dark, such as cystoscopy, since it is essential to watch the patient's colour very closely.

Certain general contraindications to anaesthesia

apply with especial force to gas-oxygen. It should be avoided where there is advanced degeneration of the heart and vessels because of the possibility of acute cardiac dilatation. The face piece renders manipulation of the jaw and tongue difficult, so that the method is unsuitable for cases with dyspnoea or obstruction to the air way.

In view of the facts brought forward, I believe that gas-oxygen has a wide field of usefulness in civil practice. It has proved successful in many American clinics and is steadily becoming more popular in Great Britain. On the other hand, not a few surgeons have tried the method and soon discarded it. From the published accounts it seems that the majority of the failures have been due to its trial in unsuitable cases and to the fact that surgeons who have been used to ether anaesthesia, often fail to realize the limitations of gas-oxygen. Although the method is by no means universally applicable, its successes are so striking, especially in desperate cases where other anaesthetics are contraindicated, that I feel that we in Melbourne have delayed too long in making use of it and at least investigating for ourselves its merits and defects.

References.

- (1) Boyle, H. E. G.: *Lancet*, 1917 II., p. 667.
- (2) Seybould, J. W.: *Med. Record* (N.Y.), 1917, p. 63.
- (3) Buxton, D. W.: *British Medical Journal*, 1916, II., p. 159.
- (4) Robinson, W. E.: *British Medical Journal*, 1916, II., p. 291.
- (5) McCordie, W. J.: *British Medical Journal*, 1916, II., p. 109.
- (6) Baldwin, J. F.: *Med. Record* (N.Y.), 1916, p. 177.
- (7) Quoted by Seybould: *Vide supra*.
- (8) Marshall, G.: *British Medical Journal*, 1919, II., p. 77.
- (9) Page, H. M.: *Proc. Roy. Soc. Med.*, VI., p. 27.

RECTAL ANAESTHESIA.¹

By R. Howden, M.B., B.S.,

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The administration of an anaesthetic by the rectum has been used intermittently for the last 10 or 15 years, the anaesthetic used being oxygen and ether and later an ether and olive oil mixture. With regard to the former I have no personal knowledge, but Flagg says it is only possible to maintain and not to induce anaesthesia by that means. Vapourizing of ether alone high up in the rectum has been tried, but abandoned, owing to the amount of inflammatory trouble following. Anaesthesia by the injection into the rectum of olive oil and ether has overcome the objections of the two former methods.

Dr. Gwathmey, of New York, found that when liquid ether was mixed with a small quantity of olive oil, it could be injected into the lower bowel without causing irritation and that a very satisfactory method of anaesthesia could thus be obtained.

The procedure is quite simple and no elaborate apparatus is required. But as Flagg points out that though the method is certainly attractive from certain points of view, it is pernicious because of its

apparent simplicity. The small surface which the gut offers for the absorption of the ether vapour, imposes the need of a concentrated solution placed *in situ* and necessarily absorbed slowly. This solution when once introduced into the rectum passes more or less completely out of our control.

The apparatus required is:

- (1) Olive oil and ether.
- (2) 8 oz. measuring glass.
- (3) Catheter (about No. 10 or 12 rubber) and rubber tubing.
- (4) Glass funnel.

Preliminary Treatment.

Castor oil is given the morning of the day before the operation. The diet during this day should be of such a nature to leave as little residue as possible in the bowel.

Warm water enemata are given on the morning of the operation to secure as empty a rectum as possible. This is preferably done about two or three hours before the induction of anaesthesia.

One hour before the operation a preliminary hypodermic injection of morphine 0.005 to 0.015 grm. and atropine 0.0002 to 0.0006 grm. and a suppository of chloretone 0.3 to 0.2 grm. are given, the latter to act as a local sedative.

The solution used for anaesthesia consists of a mixture of ether and olive oil (50% to 75%), and the amount given is reckoned upon a basis of 31 c.cm. of the mixture to every 10 kilograms of body weight. I have never used a larger dose than 240 c.cm. of the mixture for an average healthy male. The mixture requires to be shaken. The constituents remain blended long enough for introduction—if the mixture is warmed slightly, induction is quicker.

The Administration.

The injection should be given in the ward or bedroom, with patient lying comfortably on his left side. And I may here state that to a very nervous or panic-stricken subject the fact of being anaesthetized comfortably in bed without any face covering is a great boon. The soft rubber catheter is introduced about 10 to 15 cm. into the rectum and the oil and ether mixture is allowed to flow in gently by gravity only—at least 10 to 15 minutes being taken for the selected dose to run in.

The patient quickly becomes drowsy and excitement may supervene, but is usually very moderate and is often entirely absent. If the excitement is marked, it is perhaps best overcome by a little ether given on the ordinary face mask.

Usually in about a half of an hour anaesthesia has sufficiently developed for the patient to be removed to the operating room.

The stage of maintenance is controlled by increasing or decreasing the freedom of the respiration, *i.e.*, a towel over the face will cause the patient to sink into deeper narcosis by virtue of the rebreathing of some of the expired ether. On the other hand a pharyngeal tube will lower the level of maintenance by increasing the freedom of respiration and so the amount of ether thrown off.

Anaesthesia will usually be maintained for an

¹ Read at a Meeting of the Victorian Branch of the British Medical Association on March 2, 1921.

hour and a half. Occasionally it is necessary to supplement the rectal administration by the drop method on the mask, but this is usually in big-framed, robust males.

Should there be signs of respiratory failure, the mixture should immediately be withdrawn from the bowel by reintroducing the catheter and allowing the retained solution to run off. And if respiration should fail, artificial respiration must be done—and rebreathing of carbon dioxide may be beneficial. If this is ineffective, it has been recommended that an intravenous injection of saline solution should be given with the object of reducing the ether tension.

After the operation is completed it is very necessary to wash out the rectum and bowel thoroughly. To do this a tube is passed 20 to 40 cm. into the rectum and a large enema of soap and water used. It is advisable to make provision for a rectum flow by inserting a second short stiff wide tube about 2.5 cm. beyond the sphincter. Sufficient fluid should be used until the return flow has no smell of ether; then a little saline solution is run in, followed by 60 to 120 c.cm. of olive oil, with a view to neutralizing any ether that may be left behind.

If this after washing of the bowel is neglected, the patient may fall into a deep, rather alarming stupor. It is always well that when returned to bed the patient should be on his side with the head of the bed raised.

The tendency to after-sickness is diminished and often there is no sickness at all. So far as my limited experience goes, there has been no rectal or colonic irritation following this procedure.

The advantages of the method are:

- (i.) The nature of the induction in the patient's bed is a great boon.
- (ii.) The apparatus is simple and economical.
- (iii.) The control, when effective, is most simple.
- (iv.) When the intratracheal method is not available, this method is very suitable for operation in the oral passages, the nasal passages and the head and neck, as the anaesthetist is out of the way of the surgeon.

The disadvantages are:

- (i.) The increased amount of labour thrown on the nursing staff, so that it cannot be used as a routine method.
- (ii.) The preliminary preparation so distresses the patient.
- (iii.) It is undesirable in cases where the Trendelenberg position may be required.
- (iv.) It is not always possible to recover injections which may be having untoward effects.
- (v.) It cannot be used for emergency cases.
- (vi.) It is contraindicated in any condition of irritation or ulceration of the bowel or rectum.

MODERN OBSTETRICS: THE CASE FOR NATURE.

By Felix Meyer, M.D., B.S.,

Honorary Consulting Surgeon, Women's Hospital, Melbourne.

In her article in *The Medical Journal of Australia* of April 9, 1921, "Observations on Some Principles

Governing Modern Midwifery Practice," Dr. Margaret McLorinan states: (1) "That more than half the women are permanently damaged by the so-called normal function of bearing a child." (2) That, in her opinion, this morbidity is due to difficult labour, the great cause of which is the disproportion of the foetal head at the end of a nine months' pregnancy to the normal female pelvis. (3) That "we have no positive evidence that within the last 100 years the average size of the female pelvis has increased; on the contrary, the reverse would appear to be the case. Unfortunately, the same cannot be said about the foetal head." (4) That "nine months is becoming too long a period for the foetal head to be retained in utero."

I propose to offer some comment on the text furnished by Dr. McLorinan. Though my own long obstetric experience in hospital and private practice would not justify the extent of Dr. McLorinan's claim as regards the damaging effects of child-birth on women, it has confirmed the views I put forth at the Intercolonial Medical Congress, 1889, in a paper on "The Obligations of Gynaecology to Obstetrics," in which I maintained that an unduly large amount of female pelvic disease was directly traceable to child-birth—for reasons, however, not connected with disproportion of the foetal head.

Dr. McLorinan says: "The increase in the intellectual development of the modern human has resulted in a corresponding increase of neopallium. Function is succeeded by structure and to this there can be no limitation." Beyond this statement she adduces no biological evidence to support the theory of an evolution which, *ex hypothesi*, must be regarded as working adversely against the reproduction of the human species. What, I may ask, is going to determine the limits of this increasing growth of the foetal head and this decreasing size of the maternal pelvis?

Extending the argument, this question may be put: If 100 years of increased intellectuality (or 500) has resulted in such a development of the foetal head as with a decreasing size of the maternal pelvis, necessitates, in the interests of the mother, delivery at the end of eight months, what will be the safe limit of intra-uterine life 1,000 years hence?

But have we any warrant for the support of such a theory? Does Dr. McLorinan really believe that 100 years "of increased intellectuality" has speeded up the neopallium to the extent that it forces on us in the average case the alternative of a damaged mother or an immature child? An evolution operating in this direction might well wring from us an appealing cry to Nature for some beneficent check to our increasing intellectuality.

To establish Dr. McLorinan's theory on a sound basis it would be necessary: (1) To show that difficult labour is "modern" in its incidence and that it is increasingly wide-spread. (2) To eliminate most of the recognized causes of difficult labour, other than the disproportion of the foetal head. (3) To have a wide range of accurate measurements of maternal pelvis and foetal heads within the last hundred years, to compare with the corresponding measurements of the present day. (4) To show an immunity from

difficult labour in races who have not advanced in the scale of intellectuality.

So far as my study of the subject has guided me, it has led me to the conclusion that the labour of the average woman of to-day is not appreciably different from, or is not more difficult than, that of the average woman one century or many centuries ago. Turn where you will to medical literature, from the time of Hippocrates to the present day, you will find convincing evidence in proof of this statement.

I have had for many years in my possession "A Manual of Midwifery and Diseases of Women and Children, with a Complete Atlas," by Dr. M. Ryan, Professor of Medicine and Midwifery, etc., etc.; fourth edition, 1841 (first edition, 1828). The work represents a wide personal experience in obstetrics and gynecology gained in dispensaries, hospitals and private practice dating from 1815. The works of ancient and modern writers on these subjects are laid under contribution, as well as those of the profession at home and abroad. The result is an excellent and authoritative work which received high recognition. Of the 550 pages of the book, the author devotes more than 100 to dystocia—difficult and præternatural labour. He deals with the immediate and remote consequences of difficult and tedious labours, which he characterizes as "real and not imaginary evils"—lacerations, inflammation, suppuration, heavy womb, falling of the womb, etc.. Time and patience count for much with this accomplished obstetrician and though "the exact time for applying the forceps must, however, be subject to the judgement of the obstetrician in any individual case," "it is advised as a general rule that the labour should have continued twenty-four hours before the use of the forceps." No one who reads his chapter on dystocia will be persuaded that labour 100 years ago was any "easier" than it is to-day.

Going back 300 years, I read in my much treasured tome, "The Works of that Famous Chirurgeon, Ambrose Parey" (published 1649), that, "because that the travail of the first time of childe birth is wont to be verie difficult and grievous," he prescribes a soothing ointment to lubricate the passages, etc.. Ambrose Paré (1509 to 1590), the re-discoverer and perfecter of podalic version, represents early scientific obstetrics, as contrasted with the empiricism of Hippocrates and his disciples, and some of his ideas about difficult labour have a curiously modern touch.

It is a long way back to Hippocrates (420 B.C.), Celsus (30 B.C. to A.D. 14), Soranus, the father of ancient obstetrics (A.D. 98 to 117), Moschion (A.D. 117 to 138), Galen (A.D. 131) and later writers on medicine and there is abundant evidence to show that difficult labour, as we understand it, was of common occurrence in those far off times. Hippocrates compared the infant's head to an olive in the neck of a bottle and mentions instruments for the extraction of the foetus. And from the accidents and difficulties of child-birth there was built up, even in those remote days, a gynecology applicable to a pathology which finds its analogue in our modern day.

An inquiry into the conditions of child-birth among uncivilized or inferior races would carry us very far afield. In his exhaustive study of "Labour Among

Primitive Peoples," Engelmann has shown that the empirical or natural obstetrics which still survives among tribes or peoples dependent on their own resources, includes a great variety of mechanical and medicinal measures to meet the difficulties and dangers of child-birth. The illusion—a fairly widespread one—that abnormal, or difficult, or prolonged labour is exceptional with "savage" people is rudely dispelled by the account of the various mechanical devices, mainly of a *vis a tergo* nature, to make labour more speedy and less painful, such as changes of posture, swinging by the limb of a tree, powerful massage, simple expression, either by the encircling arms of an assistant (generally a man) or the patient's hands pressing on her abdomen, "the assistant going so far as to trample upon the back or belly of the patient." The means, which vary with peoples, are as uncouth as they are endless.

Engelmann tells us that: "In Mexico and Southern India the woman is shaken several times to promote delivery; but if this does not answer, she is rolled on the ground or suspended by her feet and shaken." (This method is tried after the failure of downward pressure.) "The Nez Percé Indians reverse the patient if labour is prolonged and whilst the head rests upon the ground, shake the body vigorously in the air. The Esthonians suspend and shake the patient vigorously if labour is retarded. In Syria the patient is given twenty-four hours for her labour; if then undelivered, four male or female friends pack her in a blanket, roll her about and bounce her up and down to facilitate delivery!" One could fill pages with these adventures in quest of eutocia.

In the transactions of the Edinburgh Obstetrical Society (Vol. IX., 1883-84) there is an interesting first-hand account by Robert W. Felkin, F.R.S.E., F.R.G.S., of labour in Central Africa, delightfully illustrated. One can readily accept his conclusion: "That labours are by no means so very easy in this part of the world and are not the painless, pleasurable affairs which some writers would have us believe"—a conviction endorsed by Professor Simpson, who says elsewhere that: "The accidents and difficulties described as so frequently occurring amongst such primitive peoples proved that labour among the black races was not the safe and easy process it was sometimes supposed to be."

Where, then, are we to look for the cause of the unduly large morbidity following child-birth? For most of it, I maintain, now, as in a former article, in unscientific obstetrics. The theme has been so well expounded in Dr. Fourness Barrington's luminous address as President of the Section of Obstetrics and Gynecology at the Australasian Medical Congress, Brisbane, 1920 (published in *The Medical Journal of Australia*, September 11, 1920), that, for the purposes of this article, it covers the ground of complaint completely. One quotation from Dr. Barrington's address will suffice: "The truth is not always pleasant; but it may be said here that when the practising obstetrician realizes his great responsibility and that no small share of this terrible maternal mortality and morbidity lies at his door, he has made the first step towards progress." There will be no doubt attached to Dr. Barrington's meaning when he says

that: "Labour is a natural process, which is best left to itself and which, in the great majority of cases, it is criminal to disturb."

The human race has not, so far, conducted its mating on eugenic principles. Nature has produced in the past, and will continue to produce, contracted pelvises and large foetal heads and Cæsarean section and obstetric surgery generally will continue to have their legitimate application. But even with apparently "impossible natural delivery," the impossible happens. In his address on obstetrics at the annual meeting of the British Medical Association (1909), Sir John W. Byers, Professor of Midwifery and Diseases of Women and Children in Owen's College, Belfast, etc., said:

One of the most interesting and important lessons we have learnt in maternities in recent times is the occurrence of spontaneous delivery in many patients with contracted pelvises. My own observation has taught me more and more that in a maternity hospital—where we can get rid of the importunities of the patient's friends educated in the former too-frequent practice of early interference and where we have an opportunity of observing Nature's own methods unobscured and not interfered with by unnecessary operative procedure—far more cases will terminate spontaneously under such conditions than one would suppose. Dr. Munro Kerr has had the same experience in the Glasgow Maternity Hospital, as well as Zweifel at Leipzig, while quite recently Professor Schauta has shown that in his great clinic at Vienna actually "about 80% of the births with narrow pelvis occur spontaneously, only full-term births being considered. But we have learnt something more and that is that spontaneous delivery in contracted pelvises is by far the best method, both as regards the mother and the child. Not only are the soft parts of the mother not injured under these circumstances, but the child's head is not compressed, and, as Professor Schauta puts it: "Of all the possible methods of treatment of labour in contracted pelvis, the expectant treatment gives by far the best results for the mother as regards both mortality and morbidity."

All of which goes to show that if Nature does present us with faulty as well as faultless "presentations," she has, in the co-ordination of those nervous and muscular energies which constitute the bio-dynamics of labour, provided a mechanism which has withstood, and withstood to some purpose, the denaturalizing influences of our modern civilization. It is to the misunderstanding and consequent maladministration of this mechanism that is largely due the morbidity of child-birth deplored by Dr. McLorinan and by all who have given the matter consideration.

Dr. McLorinan says that: "The advantage of an extra month to the fetus cannot be reconciled with the disadvantage to the mother."

Recent studies of ante-natal and post-natal child physiology by Dr. W. M. Feldman, Assistant Physician to and Lecturer on Child Physiology at the Infants' Hospital, London, have led him to very definite pronouncements: "Hugounenq's and Hoffström's analyses show that the amount of mineral salts and iron retained by the fetus during the last three months is twice as great as that fixed during the whole of the six months. Hence the premature expulsion of the fetus is a calamity, the seriousness of which it is not easy to exaggerate." Thermal instability, defective development of the central nervous system and the general circulation, which is still of the foetal type and therefore unsatisfactory, are all discounting

factors in the post-natal development of the immature fetus.

Potel's figures (*Dissertation*, Paris, 1895) work out to a mortality of 30.1% for the premature fetus of 7½ months and 35.5% for the eight months' fetus.

Someone has said that: "Child-birth is an effort of Nature protected by Providence." And it may be added that neither the effort nor the protection will be sensibly diminished by "a masterly inactivity" on the part of the obstetrician.

Meanwhile, the indictment of unscientific obstetrics must stand alongside of Dr. McLorinan's arraignment of Nature, "the head and front of whose offending" is, in her judgement, the over-developed foetal head.

Reports of Cases.

CLINICAL REPORTS OF TWO UNUSUAL CASES.

By Gerald Doyle, M.B., B.S., B.Sc.,
St. Arnaud, Victoria.

MALARIA CONTRACTED IN VICTORIA.

W.W., *et. c.*, was admitted to the St. Arnaud Hospital on January 7, 1921, complaining of headache, fever, malaise and pain in the left side. The patient had been ill several days before his admission to hospital. His past history was uneventful.

Habits.—Non-smoker and non-drinker.

Present illness.—This began about four days ago, with similar symptoms to those complained of on admission. He had noted that he felt ill one day and the next day felt much better. This alternate recovery and relapse took place until his admission to the hospital.

His temperature on admission was normal and the physical examination failed to reveal any pathological change, except for an enlarged and tender spleen.

The blood serum did not induce agglutination in the Widal test. The temperature rose every second evening to about 38.9° C. and dropped next morning to 36.8° C. and remained about normal till the evening of the second day, when it again rose to about 39° C.

As the patient had never been out of St. Arnaud in his life, except for fourteen days spent in Mildura, the possibility of malaria was not at once thought of.

The examination of the blood by Dr. Andrew Brennan, of St. Vincent's Hospital, revealed benign tertian malarial parasites, *Plasmodium vivax*.

The further course of the patient was uneventful, the fever and pain rapidly subsiding when the patient was put on quinine therapy.

CANINE TOOTH IN THE ANTERIOR NARES.

G.C. consulted me for general weakness, with which were associated attacks of fainting. In the course of examination, he informed me that he was unable to breathe through the left nostril.

On examination with the frontal mirror and nasal speculum, a large white mass was seen to fill up the anterior nares on the left side, lying just anterior to the inferior turbinate bone. It was hard and not tender. As it appeared loose on probing it, I inserted a forceps and to my surprise extracted a complete canine tooth.

The patient then volunteered the information that, eighteen years before, he had been kicked in the mouth by a horse. Several of the teeth were smashed and he thought that one had been driven upwards, but had never been sure. The removal of the tooth gave complete relief to the nasal obstruction.

Reviews.

PRACTICAL OTO-RHINO-LARYNGOLOGY.

A new book on laryngology, rhinology and otology, claimed by the author to have been written from a practical point

of view, a volume of some 646 pages of large type with nearly 200 textual illustrations, has been presented by Dan McKenzie.¹

The claim appears to be justified and the book should provide an excellent guide for the senior student and the general practitioner. Its outstanding features are simplicity, clearness and brevity in description and avoidance of a multiplicity of alternatives in treatment. The illustrations include numerous original drawings and photographs of merit and a plate of rare and historic interest. The latter is a reproduction of coloured drawings of a larynx by Lennox Browne, done in 1870 for Morrell Mackenzie, in a case of aneurysm of the aorta with pressure on the left recurrent nerve. Considerable attention has been paid within the limits available to operative surgery, but detailed descriptions of technique, except in the commoner procedures, are not included. Pitfalls and difficulties are pointed out and means of overcoming them suggested. The author specially mentions the methods he himself has found efficacious. Recondite etiological theories are omitted. The normal for all operations in various regions are described once and for all, thus avoiding repetitions and economizing space. Wilfred Trotter's operation for transthyroid pharyngotomy is clearly set out and eight pages are given to affections of the thyroid gland, especially those having a bearing on laryngology. The futility of trying to secure the disappearance of adenoids by respiratory gymnastics is referred to.

Spasmodic stricture of the cardiac end of the œsophagus is attributed by McKenzie to paresis or paralysis of the vagus. This is not an universally accepted view as he himself admits. William Hill, for instance, stoutly holds that it is due to spasm of the diaphragmatic crura and that the stenosis occurs at the phrenic level and not at the cardia.

The author deprecates the use of paraffin in rhinoplastic work and suggests in lieu thereof cartilage and bone grafting. For local anaesthesia in the nose he prefers cocaine-adrenalin paste. In cases of hypertrophic rhinitis he advocates sub-mucous resection of the inferior turbinate to avoid destruction of ciliated mucous membrane. He is of opinion that the Caldwell-Luc operation is seldom necessary as his simple antrostomy opening anterior to the inferior turbinate, with extension backward if required above that bone, gives sufficiently free access in the majority of cases. The operation of intra-nasal dacryocystotomy is described and illustrated with diagrams. Killian's operation is stated to have been abandoned by most modern rhinologists in cases of simple chronic suppuration of the frontal sinuses.

The chapters devoted to otology are models of terse and lucid exposition. Methods of examination are succinctly outlined and explained, the tests of hearing enumerated and the scheme adopted by the Otological Section of the Royal Society of Medicine added.

The description of the vestibular tests and the discussion of the findings serve to convey in small compass most of the important features of our present knowledge of vestibular phenomena, but no attempt has been made to discuss all the bearings of the subject. Having regard to the great variety of detail observed by operating otologists the author has limited himself generally to a description of his own methods and practice. He advises the resection of a portion of the jugular vein in all cases of lateral sinus thrombosis.

He attaches importance to the seriousness of neglecting the employment of vigorous measures in the treatment of exudative catarrh of the Eustachian tube and middle-ear cleft, in order to avoid the less amenable sequelæ of chronic adhesive catarrh. In the concluding chapter he describes the lymphatic system of the nose, throat and ears. In perusing this book we are struck by the fluidity and clarity of thought evinced in the consideration of the subjects treated and by the singular and graceful ease with which it is given expression by its author. The general arrangement of the subject matter has been planned to give ready access to any section and a copious index facilitates reference.

¹ Diseases of the Throat, Nose and Ear, by Dan McKenzie, M.D., F.R.C.S.E.: 1920. London: William Heinemann (Medical Books), Ltd.; Royal 8vo., pp. 646, with two coloured plates and 199 figures in the text. Price, 42s. net.

SOME LECTURES BY BLAND SUTTON.

To those who knew and enjoyed Bland Sutton's "Ligaments" his new book¹ comes as an old friend to whom the years have given added knowledge and charm. The original chapters on ligaments have been incorporated with a series of articles reprinted from *The Lancet* and *British Medical Journal* along with other essays illustrative of the author's varied interests and written in his own charming and readable fashion. Bland Sutton has been gifted with the power of minute observation and being endowed with a retentive memory, has been able to piece together and co-ordinate many facts of common anatomical and biological knowledge which are of practical interest in the living human being. In the preface he states that after 40 years of almost daily teaching in the Middlesex Hospital Medical School, he ventures to present these lectures and essays that they may serve as a reminder to old students of the hours spent together studying the dead with the hope of aiding the living. This ambition is richly revealed in these essays as well as in all his other writings and should encourage the reader to try to follow in his footsteps. No medical man can say he is too busy to afford the time for "outside interests" after such an example as set by Sir John Bland Sutton, for he was busy such as few others ever are, but maintained his enthusiasm all along in the anomalies and rarities of the biological world. One very forceful lesson to be learned is that the consultant and particularly the surgeon should have a good working knowledge of comparative anatomy.

This volume is to be highly recommended to all as being interesting reading, taking us from the beaten path, but repaying us well for the time given to it. The subject matter is presented in a clear and lucid fashion, the print is excellent and the wood block engravings add considerably to the reader's enjoyment. No medical man who really cares for his profession and its many problems, should be without this book.

DISEASES OF THE EYE.

It is obviously fair to base one's criticism of a book upon the claims and purposes set out by the author. A. J. Ballantyne styles the subject of this review,² "A Pocket Book of Ophthalmology" and in a miniature preface a note book which he recommends the student to carry with him to the lecture-room and clinic and to use the blank pages for the insertion of diagrams and supplementary notes.

By skilful and ingenious compression, the subject of ophthalmology is expounded in 112 small pages; there is no diagram or illustration in the book, but, instead, between each page of text is a blank sheet for the student's own use. It would be interesting to examine a number of students' copies, to see how the system works. The argument is a perennial one: the relative value of a reasonably full textbook, well written and pleasantly illustrated, *versus* that of the compressed tabloid digest. The truth is probably that each serves its own purpose. As to the subject matter, it almost goes without saying that it is sound and admirable, the writing is terse, lucid and agreeable. It is sufficiently up to date without being futurist. Gordon Holmes's cortical localization is referred to. To any student desiring an accurate summary of modern teaching, the book may be highly recommended.

ENTRANCE EXAMINATION AT ADELAIDE.

In our Education Number (April 30, 1921, page 374) the statement is made that for admission to the Medical School at Adelaide the candidates must have passed the Senior Public Examination in five subjects, including English, arithmetic, algebra, geometry and either Greek, French or German. Through an oversight Latin was omitted as a compulsory subject. Mathematics (arithmetic and algebra) are regarded as one subject.

¹ Selected Lectures and Essays, including Ligaments and Their Nature and Morphology, by Sir John Bland Sutton; Fourth Edition, 1920. London: William Heinemann (Medical Books), Ltd.; Demy 8vo., pp. 317, with 111 illustrations. Price, 15s. net.

² A Pocket Book of Ophthalmology, by Arthur Jas. Ballantyne, M.D., F.R.F.P.S.: 1920. Edinburgh: E. & S. Livingstone; Crown 8vo., pp. 119. Price, 5s. 6d. net.

The Medical Journal of Australia.

SATURDAY, MAY 21, 1921.

Choosing a Professor.

The Senate of the University of Sydney at times exhibits wisdom. Not long ago, when placed in a more advantageous position in regard to funds than the governing bodies of the Universities of Melbourne and Adelaide, a chair of medicine and a chair of surgery were established. The Senate was faced with a serious difficulty when it considered the conditions attaching to the two professorships and met these difficulties by choosing the lesser of two evils. It recognized that the most competent practitioners in medicine and in surgery would not be attracted by the remuneration offered to a university professor. It therefore became necessary to seek men who would give a moiety of their time to the immensely important task of controlling and maintaining essential departments of the medical school. The compromise was not to the advantage of the school, but the Senate realized that it was essential to insure efficiency. Moreover, it has to be remembered that the practice has gradually insinuated itself among the professors of the Medical Faculty of the University of Sydney of undertaking work not directly connected with the teaching of students or the prosecution of research. This practice arose as a direct result of the inadequate remuneration of the men responsible for the organization and proper conduct of great departments of the medical school. The Senate has already yielded to the force of circumstances. Rather than lose the services of the professors who had built up the inimitable reputation of the school, they sanctioned outside work, because they were not prepared to increase the remuneration. We hold that the price paid was too great; that a supreme effort should have been made to compensate the professors reasonably, if not generously, but to insist on the concentration of their undivided attention to their university duties. It is late, at the present time, to revolt against the principle of part-time professors, since it is a not-illogical corollary of the germ of

part-time work introduced gradually many years ago. In the case of the first professors of medicine and surgery, the school has every reason to applaud the Senate on the action taken which led to the selection and appointment of two Australian graduates of unusual merit. Both have proved their ability.

The Senate of the University of Sydney has not always been wise. Its latest determination in regard to the establishment of chairs in the medical school involves a principle which we regard as quite unsound. It is usually held that a chair represents a great department of a teaching school, not a sub-division. Usage has determined on logical grounds that the main sciences on which all medical knowledge is based, should command separate departments in the medical schools. Under the older formulæ, these fundamental sciences have been called anatomy, biology and physiology. We have claimed that this arrangement admits a sort of admixture of pure science, a hybridization, as it were. We have suggested that it would be more economical and certainly more rational to re-arrange the fundamental sciences into medical physics, medical chemistry or bio-chemistry and biology. In a similar manner we have frequently clamoured for the recognition of three ultimate or professional branches of medical education, namely medicine, surgery and preventive medicine. The Senate erred seriously a few years ago in creating a chair of pharmacology. This step signified the advancement of a sub-division of medical education to the level of a great main department. The same mistake is now being made by the establishment of a chair of psychiatry. It would seem as though a precedent had been established, for there are indications that in the immediate future a chair of obstetrics will be founded. It is imperative that the practical and theoretical instruction of both obstetrics and psychiatry should be extended, improved and developed. This can be done without the creation of a chair or of a main department in the medical school. The appointment of expert clinical teachers, tutors and demonstrators who would be prepared to devote time and energy in teaching these two highly important subjects, would be much more effective than the creation of what promises to become merely a lectureship with a high sounding title. The

student should be freed from the tedious and doubtfully useful duty of listening to endless systematic lectures. He can read all that the lecturer may say in some of our admirable text-books. He should be given ample time to attend practical instruction in the lying-in wards and in the demonstration rooms, as well as in the wards and other departments of the hospitals for the insane and of the institutions for incipient diseases of the mind.

The Senate of the University of Sydney has been unwise in instituting unnecessary professorships, while there is still no chair of preventive medicine. But it has been more than unwise in perpetuating a custom, necessary in the early days of our Universities, long since past. The selection of the best candidates for the position of professor of psychiatry is to be made by a committee in London, 12,000 miles from the portals of the Sydney University. Are we never to grow up? Are we always to ask mother to feed us? We can conceive of no franker admission of incompetence than to delegate the choice of our own professors to a committee of friends in London, who may, but probably do not, possess a full acquaintance of the conditions in Australia and of the ability of the Australian candidates. It is advisable and even necessary to advertise the vacancy in Great Britain. To ask our own graduates to submit their applications to an English committee is no longer a reasonable procedure.

THE RELIEF OF HEART DISEASE.

In the year 1911 an out-patient clinic was opened at the Bellevue Hospital, New York, for the continued treatment of patients suffering from heart disease after discharge from the wards. The patients were invited to attend at definite intervals, no matter whether they felt ill or well, in order that the control kept on them might be continuous and rational. Attached to the clinic was a trained social service worker who visited the patients in their homes and supplemented the endeavours of the physicians in charge of the clinic by advising the relatives how the home environment might be adapted to the patient's physical disability and helping to secure work for the patient suited to his cardiac complaint. In the following year the Hospital Social Service took up the idea thus begun and obtained incorporation of an institution called the Trade School for Cardiac Convalescents. This organization embraced a country convalescent home, where the experiment was started of teaching labouring men affected with

damaged hearts a trade adapted to their altered physiological state. It is stated that much useful information was collected at this home, on which further advance could be based. In 1915 there was formed the Association for the Prevention and Relief of Heart Disease. The objects of this incorporated body were to collect information concerning heart disease, to develop and to apply measures of prevention, to promote the establishment of special dispensary classes for patients with heart disease, to provide suitable occupation for these patients, to extend the opportunities for the adequate care of convalescents from cardiac disease, to seek means for the permanent care of persons with hopelessly crippled hearts and to encourage the establishment of similar institutions in other cities. When America entered into the war, there were more than twenty heart dispensary classes in New York. Then the movement was compelled to suspend its operations. In the latter part of 1919 a fresh start was made and in the first year of its renewed activity the Association certainly succeeded in justifying its existence. It is remarkable that the endeavour to combat one of the most extensive and disastrous evils affecting human beings has been launched in a wealthy and great city with very limited financial backing. From the inauguration in 1915 till November 30, 1920, the total fund available amounted to only \$8,558. Less than £1,000 was spent in 1920. Careful perusal of the last annual report reveals that the programme on which the Association is working, does not call for a large expenditure. Little has been attempted in the way of prophylactic measures. It is held that the best methods of prevention must be sought in the early detection of cardiac defects. Surely this very laudable and necessary aim belongs to the remedial measures. Prophylaxis has a totally different significance. The Association apparently anticipates more success in the campaign to limit the amount of cardiac damage in the individual than in the endeavour to control the causes of vascular disease. The Association sought the collaboration of the Board of Education and induced the Board to arrange for a systematic examination of children at selected schools and the establishment of special classes. At seven schools experimental work is being conducted to ascertain the effect of segregation and physical training on children with organic cardiac lesions characterized by signs of cardiac insufficiency. This work is also to be extended in another direction by the establishment of ungraded classes. The centre from which this school work is conducted is called the Cardiac Clinic. There are now sixteen of these clinics attached to public hospitals. The Association is busy in co-ordinating the cardiac clinics with the hospital wards, nose and throat departments, convalescent homes, exercise classes, laboratories, X-ray departments, dental departments and patients' homes by means of a well-organized social service. In addition there is activity in the direction of vocational training of adults handicapped by damaged hearts and of a popular education campaign. The scheme and its early application has been ingeniously planned and launched with enthusiasm. On paper it is very attractive. Whether its social significance

is as great as it would seem from the published record, remains to be proved in the course of time.

The President of the Association, Dr. Lewis A. Connor, and his collaborators are to be congratulated on their plucky attempt to attack this very important matter. We have consistently called attention to the fact that cardio-vascular disease is responsible for more suffering and premature death than any other group of diseases. The war has given us much information concerning the frequency of the affections grouped in this class. It has long been recognized that rheumatism, syphilis, alcohol and possibly over-indulgence in rich living are all removable causes of cardio-vascular disease. Moreover these pathological processes are responsible for the vast majority of the cardio-vascular affections. It is appalling to consider that approximately 25% of all deaths fall within this definition. The aim of the New York organization is admirable, but it is merely amelioration. It is well worth all the energy expended, provided that it supplements and does not replace the urgent work of true prophylaxis. The beginning has not been made to check the ravages of rheumatic infection. Many pathologists have endeavoured singly to disclose the real pathogenesis of these infections. Until an extensive and properly co-ordinated campaign under the direction of a master mind has taken this problem in hand, no advance can be expected. In Australia serious steps have been planned to cope with the syphilis danger. We fear that the medical profession is lending a luke warm assistance and that the enthusiastic and inspiring struggle of a handful of large-minded patriots will be resultless unless the hygienic conscience of the whole profession can be awakened. Some advance has been made in the fight against alcoholism, but much more remains to be done. Until the public is forced to recognize the intolerable amount of harm inflicted on the race by the poison alcohol and indeed by all forms of self-indulgence, hygienists will have to face the cardiac problem with dismay and a feeling of helplessness. The patching up of even many thousands of cardiac cripples is but a drop as compared with the ocean of benefit to be gained by the elimination of the causes of cardio-vascular affections.

THE MISUSE OF PRIVATE LYING-IN HOSPITALS.

In every State of Australia private hospitals are registered for the reception of women about to be confined as so-called obstetrical hospitals. The nursing staff of these hospitals usually consists of women trained for one year in obstetrical nursing. Only rarely has the chief nurse or proprietress undergone a full course of training as a general nurse. It appears that it is not uncommon for medical practitioners to use these private hospitals from time to time for surgical work. The misuse is, we are persuaded, not intentional. Medical practitioners fail to recognize that by requiring midwifery nurses to attend to patients undergoing surgical treatment, they are placing these nurses in an awkward position. The Australasian Trained Nurses' Association and the Royal Victorian Trained Nurses' Association do not permit midwifery nurses to undertake general work and con-

sequently these girls get into trouble. In addition to the risk incurred by the nurses, the thoughtless use of lying-in hospitals for surgical work inflicts a wrong on the owners of ordinary private hospitals who make full provision for the nursing and care of patients in any illness, whether surgical or medical treatment is required. Medical practitioners labour under the erroneous idea that by "feeding" the private lying-in hospitals in this way, they are benefiting the proprietresses or managing nurses. On the other hand, the nurses hesitate to refuse admission to the patients, because they do not wish to offend or disappoint the practitioner. We feel sure that the practice will be discontinued as soon as the real state of affairs is recognized.

ADVERTISING IN DIRECTORIES.

The General Medical Council referred a short time ago to the Executive Committee the question of the position of medical practitioners who allow their names to be advertised in a publication called the "Buff Telephone Book." On February 21, 1921, the Committee resolved:

That the Executive Committee is of opinion that the insertion of the name of a medical practitioner for payment, whether with or without typographical display, in a list issued to the public and purporting to be a list of local medical practitioners, which is not open to the whole of the profession without such payment, is not in accordance with the professional standards in respect to advertising and might be held to bring a practitioner so advertising himself within the terms of No. 5 of the Council's Warning Notices.

While it is unfortunate that the Executive Committee should have restricted the application of this finding to insertions for which payment is made, it is clear from the context that the principle in medical ethics on which the Committee has based its decision, is the undesirability of an advertisement of a practitioner's name in a list issued to the public which is not open to the whole of the medical profession without payment. The fact of payment merely aggravates the offence. Moreover, it may in certain cases be difficult or even impossible to ascertain whether payment has been made or not. The ruling, no doubt, covers the instance of the "Buff Telephone Book." In the instance dealt with recently by the Federal Committee of the British Medical Association in Australia, this principle was applied to a publication known as "Who's Who in the Commonwealth." Since this list is not open to all medical practitioners in the Commonwealth, it is obviously objectionable for a practitioner to allow his name to be included and more than objectionable to permit a biographical notice to be published in connexion with his name.

POST-GRADUATE LECTURES ON CARDIAC DISEASE.

The course of five lectures on cardiac disease arranged by the Melbourne Permanent Committee for Post-Graduate Work (see *The Medical Journal of Australia*, May 7, 1921, page 392) will be delivered by Dr. Hume Turnbull on Tuesday, June 8, 1921, and on the following four Tuesdays at 8.30 p.m. at the Walter and Eliza Hall Institute of Research in Pathology and Medicine. The fee for the series will be £1 1s. The Committee will announce at a subsequent date the general arrangements including fees of the further lectures on special subjects.

Abstracts from Current Medical Literature.

ORTHOPÆDIC SURGERY.

(179) Repair of Collateral Ligament of the Knee-Joint.

In cases of marked instability of the knee-joint Alec. H. Edwards (*Brit. Journ. Surg.*, January, 1921) suggests an operative procedure to repair the collateral ligaments. In the case of the fibular collateral ligament the incision exposes the *fascia lata*, the lateral condyle, the tendon of the biceps and the head of the fibula. Flaps are made of the biceps tendon, which is fixed with a staple into the femur, and of the *fascia lata*, which is similarly fixed into the head of the fibula. Strong tension should be maintained in both instances during the actual fixation. A few stitches help to secure the flap and the wound is then closed. In the case of the tibial collateral ligament an incision is made along the medial side of the knee, with the centre at the medial condyle. The *M. sartorius* is separated from the condyle, while the *gracilis* and *semi-tendinosus* are separated and drawn forwards. Both of these tendons are divided at the level of the medial condyle, dissected back to their attachments and drawn well forward. The distal portions are stitched together and inserted into a groove cut on the medial epicondyle and fixed with a staple. The proximal part of the *semi-tendinosus* and *gracilis* are then stitched to the *sartorius*. The limb is immobilized in plaster of Paris for fourteen days and in one month gentle active movements are allowed.

(180) Recurrent Dislocation of the Shoulder Joint.

From the standpoint of the stability of the shoulder joint, the deltoid is a dangerous muscle. The position in which dislocation occurs, is always one of abduction and the contraction of the deltoid really assists to thrust the head through the weak inferior aspect of the capsule when the arm is outstretched. When the shoulder becomes dislocated during the most trivial strain, or simply as a result of contraction of the deltoid muscle, the condition may be considered a recurrent dislocation. To remedy the condition a number of procedures have been proposed, but Alex. Gibson writes that he has found the deltoid flap operation most satisfactory (*Canad. Med. Assoc. Journ.*, March, 1921). The flap is cut from the posterior portion of the deltoid muscle and sutured to the coracoid process. This provides a muscular sling, which contracts during abduction of the arm and forms a firm resistance to downward displacement of the head of the humerus. Seven operations have been done by the author and so far the results have been uniformly favourable.

(181) Stoffel's Operation for Spastic Paralysis.

In spastic paralysis the element of spasticity far overshadows the element of paralysis. The groups of muscles

which are structurally weak, become over-stretched and placed in a bad mechanical position, while the stronger groups become more spastic. All methods of treatment aim at securing muscle balance and in Stoffel's operation this is effected by endeavouring to alter the condition of the spinal reflex arc, which, according to A. Bruce Gill (*Journ. Orthop. Surg.*, February, 1921) produces the spasticity. In addition to breaking a "vicious circle," the operation improves the patient's cerebral control. Before operation is undertaken, preliminary treatment in the shape of correction of the deformity in plaster of Paris, massage, active exercises and galvanism should be carried out. The actual operation is carried out by attacking the nerve bundles in the intact nerve and details are given in the case of the median, obturator, sciatic and tibial nerves. The extent of partial resection can only be gauged by experience; but often one-half or more must be removed. Contractures are only dealt with mechanically if they persist during deep anaesthesia and, if present, can usually be overcome by forcible correction. In those cases in which contractures disappear during anaesthesia, no after-fixation is used and in a week the patient is sent to the gymnasium for training. Operation is contra-indicated in cases in which there is athetosis, progressive multiple sclerosis, diffuse spasm over the whole body, or extreme idiocy. Hemiplegia, both in children and adults, is generally a suitable condition for operation.

(182) Restoration of Shoulder Function After Loss of the Head of the Humerus.

The only solution of the problem presented by the great disability which results from loss of the head or upper portion of the humerus following infection or trauma, lies in the replacement of the bone which is missing. Fred. H. Albee (*Surg., Gynec. and Obstet.*, January, 1921) divides the cases into two groups. In the first group are placed those cases in which the musculature of the shoulder is practically intact. A movable, functioning, reconstructed shoulder joint may be produced by replacing the lost portion of humerus with a graft of the head and upper portion of the fibula. In some cases the muscles may be attached individually to the graft and are the most favourable factor in the restoration of function. The second group include the cases in which the muscles have been so destroyed that it is impossible to restore the power of movement. The treatment consists in attempting the operation of arthrodesis so that the scapular muscles may be employed to move the humerus. The position of the arm for arthrodesis which is favoured by the author is one of flexion at an angle of 90° and of slight internal rotation, which brings the hand in front of the face. The humerus is attached to the scapula by a truss work of tibial grafts and immobilization in plaster is maintained for about

three months. Great conservatism should be observed in the final removal of all support in these cases.

(183) Internal Splinting of Bone.

In the open treatment of fractures the steel plate has had great popularity because of the simplicity of its application. This advantage, however, does not justify its use since steel acts as an irritant and foreign body. In a large percentage of cases the plate has to be removed. Cortical bone plates have some advantages over steel plates, but special instruments are required for their use and they are apt to break when used for fractures of large bones. The ivory key, according to Paul B. Magnuson (*Northwest Medicine*, December, 1920), offers the best solution of the problem. A slot or key way is formed by cutting the bone with a twin circular saw and removing the cut fragments. The line of fracture occupies the centre of the keyway. An ivory plate is then driven into the keyway until it reaches the cortex on the opposite side. An ivory peg or nail is driven through to hold the plate into the slot and to prevent movement in any place. Any section of the plate or pegs projecting beyond the cortex of the fractured bone is removed. In cases of simple oblique fracture an ivory screw with a square head which can be turned with a wrench is fitted into a thread cut with a tap. In long fractures two screws may be used.

(184) Orthopædic Treatment of Burns.

Harrigan and Boorstein (*Annals of Surgery*, November, 1920) maintain that contractures due to burns can be prevented by proper orthopædic treatment. In burns of the neck a removable collar of felt is applied to over-correct the neck in the direction required. In burns of the shoulder and axilla, to prevent the "bat wing" deformity, the hand is tied to the head of the bed, so as to maintain the upper arm in extreme abduction. At the elbow the arm is kept in extension by tying it to the corresponding side of the bed. A plaster cast is used to keep the fingers apart in burns of this region. Recently the various modifications of Jones's and Thomas's splints have been adapted for the prevention of contractures of the limbs.

(185) The Use of Wire in Surgery of Bones.

To get over the difficulties in obtaining a certain and neat fixation of wire used in the treatment of fractures J. M. Neff and J. S. O'Malley (*Surg. Gynec. and Obstet.*, June, 1920) propose to solder the wire. Copper or silver wire previously tinned is passed through a drill hole in the usual way and drawn tightly in opposite directions. This brings the ends of the wire into lateral and parallel contact. Liquefied zinc chloride is applied to the point of contact and a drop of electrician's solder applied with a tinner's soldering iron secures fixation. The soldering iron is tinned before using. Two cases are reported.

MORPHOLOGY.

(186) The Growth of Neurones of the Gasserian Ganglion.

A systematic study of the growth of the neurones forming the cranial and spinal ganglia of the albino rat is in progress in the neurological laboratory of the Wistar Institute. K. Nittono, in the *Journal of Comparative Neurology*, October 15, 1920, presents to this study a contribution dealing with the Gasserian ganglion. Measurements were made of 25 of the largest ganglion cells in 76 ganglia taken from 38 normal albino rats and of the 10 largest fibres from each branch and from the fifth nerve root in 39 rats. The growth of the ganglion cells shows three distinct phases: (1) A rapid growing period, extending from birth to about the twentieth day of life. (2) A slower period, lasting for a further 60 or 80 days. (3) A period of much slower rate, extending to maturity. This growth rate is noted in both nucleus and cell body, but the increase in the diameter of the nuclei is slower than that of the cell body. The ratios between the volumes of the cytoplasm and the volumes of the nuclei increase with increasing size (age) of the ganglion cells and in the largest cells the ratio is more than twice as large as in the smallest. About 20 days after birth the cell body and the nucleus show almost the same appearance as that in the adult rat. After this time both increase in size and there is also an increase in the quantity of Nissl substance, but the other morphological changes are very slight. The diameter of the fibres is least in the ophthalmic branch and largest in the fifth nerve root. Up to 80 days of age the volume of the ganglion cells increases at the same rate as the area of the head surface; but after this the growth of the neurone slows down, while that of the head continues. The ratios between the diameters of the ganglion cells and the diameters of the nerve fibres decrease as the body weight increases. The decrease after puberty is due to a longer continued growth in the diameter of the fibre, as compared with that of the ganglion cells. The neurones in the Gasserian ganglion are larger, have a higher nucleus-plasma ratio and mature earlier than do those in the ganglion of the seventh cervical nerve. However, the fibres from the Gasserian cells have a smaller diameter than those of the seventh cervical ganglion. These differences are possibly related to the somewhat specialized character of the fifth cranial nerve.

(187) Innervation of the Palate.

Arnold Rice Rich (*Bull. Johns Hopkins Hosp.*, September, 1920) discusses the innervation and action of the *tensor veli palatini* and *levator veli palatini* muscles. The results of several previous workers, both clinical and experimental, are first reviewed and are found to disclose a number of conflicting opinions, even when they are based on experimental evidence. The author's conclusions are that the fifth nerve is the only cranial nerve which supplies

motor fibres to the *M. tensor veli palatini*, while the *M. levator veli palatini* is innervated by the so-called bulbar portion of the eleventh nerve or, to speak more correctly, by the inferior rootlets of the tenth nerve, since the bulbar portion of the eleventh has been shown to be really an integral part of the vagus. These results are based on experimental work done on dogs. The author was not content with observations of the movements of the soft palate. By an ingenious and careful technique he rapidly exposed the *M. tensor veli palatini*. When stimulating electrically the nerves in the interior of the cranium, he took care to prevent diffusion of the current by using a weak current with unipolar electrodes and by drying the part of the nerve stimulated. In every experiment stimulation of the mandibular branch of the fifth nerve caused definite vigorous contractions of the *M. tensor veli palatini* on the side stimulated. The presence of a relay station in the otic ganglion was also excluded. After painting the ganglion with nicotine, he observed no appreciable difference in the contraction which followed stimulation of the fifth nerve. The writer points out that paralysis of the palate is rarely observed clinically in cases of disease of the fifth cranial nerve. Under anaesthesia the raphe on the palate of a dog was marked with indian ink. The tendon of the *M. tensor veli palatini* was then cut and while the swallowing reflex was being set in motion, the palate was observed. Not the slightest dragging of the palate to the non-paralysed side could be detected. Finally, the case of a patient under observation in the Johns Hopkins Hospital is recorded. This patient had a unilateral affection of the fifth cranial nerve. Naso-pharyngoscopic examination showed that the pharyngeal orifice of the Eustachian tube on the affected side remained quite stationary during deglutition, offering in appearance a striking contrast to the normal reflex opening of the orifice on the unaffected side. This and other observations would indicate that the main function of the *M. tensor veli palatini* is to open the Eustachian tube. In the case of the *M. levator veli palatini*, direct observation of the muscle was also the basis of experiment.

(188) Collateral Circulation Following Occlusion of the Superior Vena Cava.

Otto F. Kampmeier records a case of complete occlusion of the *vena cava superior* occurring in a negress of middle age who had suffered from syphilis and chronic mania (*Anatomical Record*, November 20, 1920). Upon examination of the heart *post mortem* the major portion of the right atrium as well as an extensive area of the aortic arch was found to be of a bony hardness. Upon opening up the heart the entire wall of the right atrium and the interatrial septum was composed of thick, compact, "osseous" tissue which had extended up through

the anterior wall of the root and arch of the aorta and had invaded the atrio-ventricular septa and partly surrounded the tricuspid and mitral valves. This calcified tissue was 6 to 8 cm. in thickness. The only trace of the right atrial chamber was a passage leading from the *vena cava inferior* and coronary sinus to the tricuspid portal. As a result of this condition all blood returning from the body above the diaphragm (except from the coronary veins) was forced to descend to the abdominal cavity and enter the *vena cava inferior*, so that the direction of the blood stream in the azygos veins was the exact reverse of the normal. Much of the venous flow from the head and superior extremity flowed directly into the azygos and hemi-azygos veins through the anastomosis of the right and left supreme intercostal and accessory hemi-azygos veins with the innominate and vertebral veins. The remainder passed *via* the *vena cava superior* through the azygos vein in a reverse direction to the normal. Most of the blood entered the *vena cava inferior* by a pair of anastomoses just below the diaphragm close to the hepatic veins. The remainder of the venous return passed by way of the left renal vein and left first lumbar vein. Much of the superficial venous drainage of the thoracic wall was absorbed by the thoraco-epigastric and superficial and deep epigastric veins to be carried to the femoral and iliac veins.

(189) Controlling Factors in Amphibian Metamorphosis.

John F. Fulton, Junr., writing in *Endocrinology*, January, 1921, has reviewed the controlling factors in amphibian metamorphosis, a field in which most fruitful results have been achieved. He states that results which have been gained, give to these investigations an intensely practical aspect and indicates that endocrinology as a science will be concerned in the future not only with the physiology of mature individuals, but also with embryological developments. The metamorphosis of amphibians cannot take place in the absence of the thyroid hormone and the feeding of growing tadpoles with desiccated thyroid accelerates their rate of metamorphosis. Thyroidectomy interferes with bone growth and causes the liver, intestines, thymus, brain, kidney and spleen to retain their larval condition, whereas gonads and lungs develop normally. But a larva so arrested will metamorphose normally if fed with thyroid extract or with organic iodine. The organic extract of the pineal gland accelerates metabolic processes, but seems to inhibit the growth of the testis. The thymus is primarily a lymphopoietic organ and is probably not an endocrine organ. It does not affect metamorphosis and has no influence on sexual development. The cells of the pituitary are closely related in function to the interstitial cells of the testis. The anterior lobe probably stimulates sexual development, accelerates growth and assists in bone ossification.

British Medical Association News.

SCIENTIFIC.

A meeting of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on March 2, 1921. Mr. Basil Kilvington, President, in the chair.

Dr. F. L. Davies read a paper on "Ether Anæsthesia" (see page 413).

Dr. R. W. Hornabrook read a paper on "Morphine and Atropine in Connexion with Anæsthesia" (see page 415).

Dr. S. W. Ferguson spoke on the intratracheal administration of ether, and demonstrated the apparatus. He said that his remarks would be confined to the intratracheal method of administering ether. He demonstrated two apparatuses, the larger one designed by Kelly and the smaller designed by Dr. Lidwill of Sydney for portable use. He always gave a preliminary injection of morphine and atropine, the former in small dosage. The advantages claimed for the method were that an absolutely regular anæsthesia with warmed ether vapour was attained, artificial respiration being kept up all the time, that no matter in what position the patient was, a thoroughly efficient air way was maintained with no trouble whatever.

It provided a clear field for the surgeon, as it was unnecessary for the anesthetist to be within a yard of the patient.

The anæsthesia could be deepened or lightened very rapidly and if any trouble occurred, warmed air only would be given or oxygen added as desired.

The method was particularly valuable in nose and throat operations. The current of air could be increased just enough to overcome the normal respiratory intake and this combined with the exit blast of air by the side of the catheter rendered it practically impossible for material to enter the trachea. It was invaluable in bronchoscopic examinations and in cesophagoscopy quite eliminated the respiratory trouble invariably caused by that investigation with other forms of anæsthesia.

For operations on the pleura, by preventing collapse of the lung the method was ideal.

It was probably the safest form of anæsthesia for any operation. Dr. Ferguson quoted one case in which a surgeon had removed the piles while another at the same time had been operating on the throat. In a series of nearly 2,000 cases he had seen no pulmonary complications.

In many difficult heart cases, in which the patient was far from well during the induction, the whole picture was changed immediately after the introduction of the catheter.

A further advantage was that when the operation was nearing completion, the lungs could be washed out with warmed air. This meant the return of the patient to bed practically recovered from the anæsthetic effects. After-vomiting was very much lessened, probably due to the fact that mucus laden with ether vapour was not swallowed as was usually the case in ordinary methods of administration. Not the least of the advantages of this method was the complete relief to the anesthetist from any worry or tension.

Dr. S. O. Cowen read a paper on "Gas-Oxygen Anæsthesia" (see page 416).

Dr. R. Howden read a paper on "Rectal Anæsthesia" (see page 418).

Dr. C. R. Player also read a paper.

Dr. H. B. Lee, D.S.O., M.C., spoke from an experience of 18 months at No. 11 Australian General Hospital, during which period he had been called upon to administer anæsthetics in some 1,400 cases. He had formerly been wedded to the Shield's mask, induction by chloroform-ether mixture, and maintenance of anæsthesia with "open" ether. Owing to too frequent troubles with cyanosis, he had discarded the Shield's mask and he had also abandoned the use of chloroform. Although engaged constantly in the administration of anæsthetic drugs, he could say that in the last twelve months he had not used a single drop of chloroform.

Dr. Lee stated that he preferred the "Schimmelbush" mask, covered with one layer of flannel. This was superimposed on a face-mask composed of several layers of gauze, with a triangular aperture over the mouth and nostrils. On

to such a mask he dropped ethyl chloride and ether freely for induction, the period of which was very brief and consequently could not be very distressing. It was exceptional for any of the soldier patients to take longer than two minutes to "go off" and it was to be remembered that many of them were alcoholic.

Before commencing administration, he arranged the patient's hands across the chest, with the fingers interlocked. The effect was that in any subsequent struggling the hands became more tightly locked and the embarrassment occasioned the anesthetist by the patient flinging his arms about was obviated.

Dr. Lee emphasized the great advantages to be gained by a preliminary talk with the patient, in which suggestion could be brought to bear, the patient thus rendered more receptive. He was decidedly in favour of a small preliminary dose of morphine and atropine and considered that the morphine was a valuable aid to suggestion in creating an amenable condition of mind in the patient. For the maintenance of anæsthesia he kept to "open" ether, and ether alone. It was his practice, when once anæsthesia was established, to place a towel over the mask and to give ether intermittently, as required. He did not favour a continuous drop; it was not necessary to maintain anæsthesia and rendered the administration unduly arduous for the anesthetist in a long operation.

Indeed, in many of the long plastic operations for which he had been required to administer anæsthetics in military practice, to have given a continuous drop anæsthesia was to court being "put off" himself. Patients would remain anesthetized, even though the ether were given intermittently, as long as the operative manipulations were confined to the same part. He had often noted, however, that a transfer of the surgeon's activities to another region, i.e., to take a skin or bone graft, was accompanied by evidence of insufficient anæsthesia for the new procedure.

Dr. Lee drew attention to the superior qualities of the Shipway mask, with its special mouthpiece, which eliminated all danger of the tongue falling back. It thus made for freer breathing and consequent easier access of the surgeon to the abdomen.

In the majority of head operations it was necessary that the anesthetist should be out of the way of the surgeon. To suit such circumstances he utilized the Shipway apparatus, with a foot bellows which could be operated from any distance. In such a case the two best guides to the patient's condition were to be found in the character of the respirations and in the colour of the blood coming from the wound. In his whole experience at the Caulfield Military Hospital there had not been a single instance of failure of respiration; he attributed this to the Shipway mouthpiece and the maintenance of a free air way.

With reference to intratracheal anæsthesia, Dr. Lee said that he preferred to introduce the catheter through a tracheotomy opening, rather than insertion through the glottis. The opening should be sufficiently wide to allow of a free escape at the side of the catheter. After tracheotomy the pharynx could be plugged, and no blood whatever need find its way into the air passages during head operations.

In conclusion Dr. Lee referred to rectal anæsthesia and remarked that it was now in comparative disuse. Patients frequently became too lightly anesthetized and found the necessary preparation very distressing.

Mr. H. B. Devine contributed to the discussion from the point of view of the surgeon. In his association with Dr. Davies for the last ten years he had always been keenly interested in the subject of anæsthesia. In 1911 he had brought out a Gwathmey warm ether apparatus from America and it had been used on the majority of his private patients by Dr. Keane, until a few years ago when it was superseded by a Downs intratracheal warm ether apparatus imported by Dr. Davies. In the latter the ether vapour was blown into an open mask and only in cases of operations on the head and neck was the intratracheal catheter used.

Mr. Devine stated that he had never believed in the use of mixtures for anæsthesia and had, in fact, discarded them.

He had long ago realized that his surgical results were to an extent dependent upon the anæsthesia; he preferred

wherever possible that his patients should be only lightly anesthetized. In his opinion, there was much less shock with light anesthesia than with profound degrees; there was, of course, a quicker recovery and the subsequent vomiting was very much diminished. Light anesthesia necessitated very gentle and careful operating and often required special apparatus.

It was essential that the surgeon and anesthetist should know each other's work and that throughout the operation they should co-operate closely. Thus the varying degrees of anesthesia sufficient for the different procedures could be adjusted. It was his own practice to give his anesthetist a few minutes' notice when he was about to perform any shock-producing manipulation. There was no doubt that the anesthetist held a certain amount of responsibility with the surgeon in regard to the limitation of bad effects in operating; conversely the surgeon, by rough and unthoughtful manipulation, could make impossible a light uniform and ideal anesthesia.

Mr. Devine said that his patients were rarely given a preliminary injection of morphine. He recollected a period when the vogue was the "A.C.E." mixture and ether, on a Shield's mask. Looking back to that time he realized that there were altogether too many instances of blueness and of artificial respiration. It had to be considered that in public hospitals a large number of anesthetics were given by resident anesthetists just through their student days and if they were allowed to use chloroform, the amount given could not be controlled. In the hospital in which he worked, Dr. Frank Davies had of late years trained the students to give ether by the open method without any morphine, chloroform, or ethyl chloride. It was found that there was no obstacle to induction with ether for all classes of cases and that the student very soon became a master in its use. Now-a-days there were no blue patients and no disasters. He could not remember one scare with ether alone. Whenever difficulty arose during the progress of the anesthesia, he had always found that morphine, ethyl chloride, or chloroform had been given along with ether. Every fright he had experienced had been with mixed anesthesia. Of course, the great majority of mixed anesthetics had been satisfactory in capable hands, but he would not allow any mixed anesthesia in any of the big shock-producing stomach operations where it was impossible to retreat and where a good deal of latitude was necessary.

In some remarks on anesthesia in exophthalmic goitre, Mr. Devine pointed out that the duration of the narcosis in these cases was of even greater importance than the type of anesthesia employed, although the latter was undoubtedly important. Trouble often arose when the period of administration of "open" ether exceeded 35 to 40 minutes, by which time there was perhaps a little salivation. The operation should always, if possible, be completed within this time and it would be found that if the length and the depth of ether anesthesia were each reduced to the minimum compatible with careful work, all exophthalmic goitre patients would come through the operation quite well. He preferred these patients to be anesthetized as lightly as possible; he had even operated with the patient talking; light anesthesia involved much less risk and was followed by a better convalescence.

It had been his custom to give intratracheal warm ether vapour in exceedingly bad cases of exophthalmia goitre and even to do the operation in two stages of about twenty minutes each, dealing with one lobe only at each sitting. In some cases, however, in which the condition was complicated by edema of the legs and abdomen and fibrillation of the heart muscle (he had recently operated in such a case), it was impossible to give anything else but local anesthesia, at any rate for the first lobectomy.

Mr. Leonard Mitchell asked whether a minute dose of morphine was not justifiable. He entered a plea for morphine in just sufficient quantity to abolish that "stage-fright" which rendered the taking of an anesthetic such an ordeal to many persons. He held that the cornea and conjunctiva should be treated more delicately than was often the practice. The day had passed when it was necessary to brush the eye with the finger to gauge the depth of anesthesia. He considered that sufficient information could be gained from an inspection of the eye;

the position of the eye, the condition of the pupil and the presence or absence of oscillating movements could be noted. The inflamed eyes seen after anesthesia were much more frequently due to corneal abrasions than to the accidental introduction of a drop of chloroform or ether, although the latter was always blamed for the red eye.

With reference to the anesthetic of choice in tonsillectomy, Mr. Mitchell said that he had had a large operating experience with ethyl chloride, but had reverted to chloroform and ether in equal parts.

Dr. Gweneth Wisewould agreed with Mr. Mitchell concerning the necessity for scrupulous care in dealing with the cornea.

In her own experience she had found the necessity to take the corneal reflex quite exceptional and in a period of four years at the Alfred Hospital had not utilized the eye reflexes except on very rare occasions. The only eye signs which she considered reliable, were those afforded by the position and movements of the globe.

While fully appreciating the advantages of ether from the point of view of safety, Dr. Wisewould intimated that she was scarcely prepared to abandon chloroform altogether. She commented on the weakness of certain present-day brands of chloroform as compared with older and more potent preparations and observed that the delayed cumulative effect of the former rendered them more difficult of administration.

Dr. A. Norman McArthur, speaking as a gynecologist, remarked that anesthesia among women was comparatively easy; their confidence was more easily gained and they were in every respect easier subjects than men. He had had many personal experiences of anesthetics, including local anesthetics for which he held no brief. He was appalled at the recollection of an ether induction and would never forget the nightmare of the long period which elapsed before he lost consciousness. Ever since that occasion he had hoped that, if the necessity again arose, he might be afforded the most rapid inception of anesthesia consistent with safety.

Quite recently, owing to an accident to his finger, it had been necessary for him to submit to a general anesthetic. Dr. Lee had administered ethyl chloride and ether and in contrast to the former experience of ether alone, his sensations had been altogether delightful. He had gone to sleep very quickly and the long period of harrowing suspense which he had come to dread, had been completely eliminated.

Dr. McArthur expressed his belief in light anesthesia as conducing to much better after-results. Pneumonia, post-operative vomiting, acidosis could all be minimized by avoiding too deep degrees of anesthesia. He was thoroughly in accord with Mr. Devine's remarks regarding the necessity for co-operation between surgeon and anesthetist. He also considered that the psychological point involved in gaining the patient's confidence was of the greatest importance.

Mr. Frank Andrew spoke with reference to intratracheal anesthesia.

He had been astonished at the suggestion of a previous speaker that intratracheal ether should in all cases be administered through a tracheotomy opening. Tracheotomy was a measure which should be reserved for cases of laryngeal obstruction and in which the passage of the catheter was impossible. In no other circumstances did he consider tracheotomy necessary or justifiable for the intratracheal administration of ether and in these the patient would be tracheotomized or dead beforehand. There was no operation about the head, no matter how much blood or pus, with which intratracheal anesthesia did not cope in an ideal manner.

He had recently carried out an operation under suspension laryngoscopy and intratracheal insufflation of ether; during the course of the operation one of his sliding blades broke off and had slipped down the trachea. It was necessary subsequently to follow the piece of steel by bronchoscopy, and to recover it from the right stem bronchus. Although much bleeding had been occasioned by the original operation, in the after survey with the bronchoscope no blood whatever had been seen in the trachea. The reason for this was that with the intratracheal apparatus, blood, as it was shed, was blown out into the pharynx. It was therefore un-

necessary to perform tracheotomy in order that the entrance to the air passages might be packed off from the field of operation.

Various speakers had emphasized the paramount importance of the free air way. This was a point which could not be hammered too hard. A free or obstructed air way was the difference between good and bad anaesthesia.

In the intratracheal method a regular supply of abundant air was guaranteed from the moment the catheter was in position. The anaesthetist's responsibilities in this respect ceased and the worries of both surgeon and anaesthetist were considerably reduced.

With reference to post-operative pneumonia Mr. Andrew expressed scepticism as to chill as the most important factor. He was of opinion that post-operative pneumonia was most frequently an inhalation pneumonia. Many patients were pyorrhoeic; others had dirty mouths in other respects; in prolonged anaesthesia mucus often collected in the throat and round the aperture of the larynx. Inhalation of any such material was impossible with intratracheal anaesthesia and post-operative pneumonia consequently did not occur.

Pleurotomy and bronchoscopy were perfect procedures under intratracheal anaesthesia. He considered that it was pre-eminently the method for oesophagoscopic work. The oesophagoscope must constitute a respiratory embarrassment for ordinary methods of anaesthesia, but with the intratracheal apparatus this trouble was eliminated.

Intratracheal anaesthesia added greatly to the operator's comfort in bronchoscopy, in that the current of air and ether vapour down the bronchoscope prevented that shower of blood and pus which had frequently been encountered in the past. In conclusion, Mr. Andrew said that he knew of no method of anaesthesia for head operations in which there was such a uniform absence of congestion and a minimum of bleeding as was afforded by intratracheal administration.

Dr. J. F. Wilkinson said that he had found it interesting to reflect on the changes that had taken place since the chloroform days, when ether was rarely used and when employed, was generally given by asphyxial methods. The disadvantages of the earlier modes of giving ether and the anxiety attending the administration of chloroform were in striking contrast with the comfort of present-day "open" ether.

He used a mask with seven detachable layers of copper gauze; although it might be a little extravagant of ether, this mask was really an open one, led to no sense of suffocation and was capable of being thoroughly cleansed.

Two important factors in successful administration of ether were (i.) to give it slowly and (ii.) to make proper use of morphine and atropine. By the proper use of the preliminary injection he meant that it should be given to the patient on the operating table, in a room adjoining the theatre, with the blinds drawn. Talking should be forbidden. If such a routine were carried out, the anaesthetist would find the patient in an amenable and receptive condition and would encounter no difficulty in the induction. If the patient were made to walk upstairs to the theatre, the beneficial effects of the preliminary injection were largely nullified.

Dr. Wilkinson expressed himself as in agreement with Dr. Hornabrook regarding the necessity for keeping to the small dose of morphine and atropine. He had known respiratory trouble supervene after the patient had returned to bed in a case in which too large a dose of morphine had been employed.

Although he often gave a chloroform and ether mixture in the induction, he agreed that the vast majority of patients could be managed with ether alone, provided it were given slowly.

In regard to eye signs Dr. Wilkinson observed that it was necessary to learn to appreciate in every individual patient the best guide to the level of anaesthesia. It might be oscillation of the globes, pupil changes or drying of the pool of tears in the canthus, but it should seldom be necessary to touch the cornea. There was no doubt but that great help was to be derived from watching the eye.

With reference to the position of the head, Dr. Wilkinson said that he commenced the administration with the head in whatever position the patient found most comfortable, but he generally lowered the head slightly after-

wards, in order to insure a free flow of blood to the brain.

In his opinion a crusade was required to impress on nurses the necessity for keeping patients warm during anaesthesia and to improve the ventilation of many of the operating theatres. Nurses did not seem to appreciate the amount of bodily heat lost under anaesthesia. He had often wondered what danger lay in the admission of fresh air, even though it might contain a certain amount of dust. The close and stuffy conditions prevailing in the average operating theatre were very depressing and could not but affect patient and doctors adversely.

Reviewing the discussion, the administration of anaesthetics seemed to resolve itself largely into a question of the man behind the gun. Different men became equally proficient in the methods to which they were severally accustomed. Dr. Wilkinson was impressed with the excellence of the intratracheal apparatus, particularly for certain special operations, but remarked that after all, simplicity was the ideal. Modern "open" ether gave the greatest satisfaction for simplicity and safety.

Mr. Basil Kilvington expressed the indebtedness of all present to the readers of the papers. An excellent discussion had been evoked, in which it was apparent that there was some lack of agreement in matters of detail. Unanimity prevailed on two very important points, however. They were (i.) the elimination of chloroform wherever possible and (ii.) the maintenance of the free air way.

After all, the various modifications in method gave equally satisfactory results in capable hands, and the personal equation entered very largely into a comparison of the advantages of different modes of administration of anaesthetics.

The undermentioned have been elected as members of the Victorian Branch:

- Miss Marion Boyd Wanliss, M.B., B.S. (Univ. Melb.), 1921, Melbourne Hospital.
- John Holmes Shaw, Esq., M.B., B.S. (Univ. Melb), 1921, Melbourne Hospital.
- Clifford Henry Coomer Searby, Esq., M.B., B.S. (Univ. Melb.), 1921, Melbourne Hospital.
- Miss Beatrice Alice Warner, M.B., B.S. (Univ. Melb.), 1921, Melbourne Hospital.
- Harold William Harbison, Esq., M.B., B.S. (Univ. Melb.), 1921, Melbourne Hospital.
- John Horace Kelly, Esq., M.B., B.S. (Univ. Melb), 1921, Melbourne Hospital.
- Miss Winifred Barbara Cameron, M.B., B.S. (Univ. Melb.), 1921, Melbourne Hospital.
- Oswald Robert Trumpy, Esq., M.B., B.S. (Univ. Melb.), 1921, Warragul.
- Ronald Dingwall McIntosh, Esq., M.B., B.S. (Univ. Melb.), 1921, Canterbury.
- Robert Southby, Esq., M.B., B.S. (Univ. Melb.), 1921, Parkville.
- John Francis Dunkley, Esq., M.B., B.S. (Univ. Melb.), 1921, St. Arnaud.
- Louis Victor Darby, Esq., M.B., B.S. (Univ. Melb.), 1921, Hawthorn.
- Cyril Joseph Tonkin, Esq., M.B., B.S. (Univ. Melb.), 1921, Glenferrie.
- Byron Lionel Stanton, Esq., M.B., B.S. (Univ. Melb.), 1921, Hawthorn.
- Sydney Bernard Hudson, Esq., M.B., B.S. (Univ. Melb.), 1921, Parkville.
- Frederick James Williams, Esq., M.B., B.S. (Univ. Melb.), 1921, Essendon.
- Charles Hugh Hembrow, Esq., M.B., B.S. (Univ. Melb.), 1921, Alfred Hospital.
- Benjamin Sheinken, Esq., M.B., B.S. (Univ. Melb.), 1921, East Brunswick.
- Clive Mansley Greer, Esq., M.B., B.S. (Univ. Melb.), 1921, Upper Hawthorn.
- Miss Eileen Fitzgerald, L.R.C.P. et R.C.S., Edin., 1904, Kew.
- Edward Gascoigne Dermer, Esq., M.B., B.S. (Univ. Melb.), 1920, Alfred Hospital.

LODGE PRACTICE IN SOUTH AUSTRALIA.

The Council of the South Australian Branch has issued a memorandum to the members intimating that under existing circumstances it is necessary for lodge medical

officers to make their own arrangements in regard to the dispensing of medicines for lodge patients. The Council, after discussion with the pharmacists, endeavoured to arrange with the friendly society lodges that the provision of medicines for lodge patients should be the subject of an agreement between the lodges and the dispensing pharmacists. The lodges refused to entertain this proposal. It was therefore decided to revert to the previous arrangement between the lodges and their medical officers for the dispensing of medicines. The Council ascertained from the Pharmaceutical Society that the terms under which the pharmacists would supply medicines to lodge patients were that a dispensing charge of 1s. be paid for each prescription dispensed and that the wholesale cost of the drugs be charged. It was found that the wholesale cost of drugs averaged 6.88d. per prescription. In the southern suburbs of Adelaide the local medical practitioners discussed this matter with the pharmacists and endeavoured to persuade the latter to accept a flat rate per prescription. The pharmacists were not prepared to undertake the work on these terms. It was eventually determined that a dispensing fee of 6d. in addition to the cost of the drugs should be charged. This local arrangement which came into effect on April 1, 1921, was held to be embarrassing to the Council. Fresh negotiations were undertaken with the pharmacists, but as the pharmacists steadfastly refused to accept a flat rate for all prescriptions, the Council has determined to ask the members to make their own arrangements with the lodges or with the local pharmacists. It is a pity that the Council has been unable to insist that the lodges shall make provision direct with the pharmacists concerning the supply of medicine. This matter is outside the scope of the medical practitioner's work and save in isolated districts, medical practitioners should not be required to be responsible for the medicines prescribed by them. Perhaps some pressure can be placed on the lodges at a later date, to induce them to relieve the medical officers of the necessity of arranging for the supply of medicines.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A meeting of the Senate of the University of Sydney was held on May 3, 1921. The following degrees were conferred *in absentia*, Mr. C. J. B. Armstrong, Bachelor of Medicine and Master of Surgery.

The following appointments were made: Miss E. M. Hindmarsh, B.Sc., as Lecturer and Demonstrator in Physiology; Messrs. H. Brady, M.B., B.S. (Adelaide), and G. H. S. Lightoller, M.B., Ch.M., as Honorary Demonstrators in Anatomy.

The Rector of the University of Louvain wrote thanking the University of Sydney for the generous gift of subscribers sent in July, 1916, to relieve the distressed Louvainners whose houses and entire possessions as well as the University had been destroyed by the Germans in the early days of the war. The letter stated that "academic life had resumed in January, 1919, and the number of students at the time of writing, March, 1921, totalled 3,150."

The Dental Undergraduates' Association wrote stating their intention of endeavouring to collect the sum of £20,000 for the purpose of establishing a research scholarship in dental science.

Lectureship in Chinese. A letter was received from the Prime Minister's Department, Melbourne, in connexion with the establishment of a Lectureship in Chinese.

An application from the President of the University Union respecting an extension of the Union Building was referred to the Buildings and Grounds Committee.

Resignations were received from Dr. W. G. Armstrong, as Lecturer on Public Health; Miss M. M. Lilley, B.Sc., Lecturer and Demonstrator in Pharmacology.

It was decided to advertise the following position: The Lecturer in Public Health.

A report was received from a Committee appointed to confer with representatives of the Government in reference to the establishment of a chair of psychiatry. The report of the Committee was generally adopted and it was resolved

that the chair should be established being partly supported by the State Government and partly by the University. That the Professor should have medical charge of Broughton Hall, the right of a certain amount of consulting practice, that the appointment should be for seven years and that he should be eligible for reappointment.

Applications are to be invited for the chair throughout Australasia and the United Kingdom. The applications are to be submitted to a committee in London.

Science Research Scholarships for the year 1921 were awarded to Miss Marie Bentivoglio, B.Sc.; Mr. R. S. Lee, B.A.; Miss Margaret H. O'Dwyer, B.Sc.; Mr. G. D. Osborne, B.Sc.; Mr. T. L. Willan, B.Sc.; Miss Isora G. Anderson, B.Sc.

The John Coutts Scholarship for 1921 was awarded to R. L. Aston, B.Sc.

VARIOLA IN VICTORIA.

The occurrence of variola on board the steamship *Gracchus*, which arrived in Melbourne on April 7, 1921, and the spread of the disease to two or three persons in the general community have led to the introduction by the Federal Quarantine Service and by the Department of Public Health of Victoria of special measures to meet the threatened danger. In the *Victoria Government Gazette* of April 29, 1921, the Regulations Relating to Small-Pox, adopted under the provisions of the *Health Act, 1919*, are published.

The first regulation imposes upon medical practitioners the duty of notifying all cases of small-pox by the speediest practical means to the Commissioner of Public Health and to the council of the municipal district. In the second regulation it is set forth that when a council receives a notification that a person is suffering from or has died of small-pox, the council shall cause the patient or house to be visited by the medical officer of health or by any medical practitioner authorized by the council. The medical officer shall examine the patient and shall make such inquiries as are necessary to enable the council to take measures to prevent the spread of the disease. In the third regulation the duty of the medical officer of health or authorized medical practitioner to carry out the visit, examination and inquiry promptly and to report to the council without loss of time is set forth. The arrangements for the isolation of all patients suffering from small-pox are governed by the fourth regulation. According to the fifth regulation, all persons who have been in contact with a patient suffering from variola, may be isolated or placed under surveillance. The next regulation gives the council power to isolate any house or premises on the advice of its medical officer of health.

Persons placed under medical surveillance are required to present themselves for inspection and examination to the medical officer of health or authorized medical practitioner signing the order as frequently and at such times as may be required. Any person under medical surveillance must, on the appearance in himself of any symptoms or signs of illness or disease, report the facts immediately to the medical officer of health or authorized medical practitioner. In the case of a child the parent or guardian has to carry out these duties. No person under medical surveillance is allowed to leave the locality without permission. Every person who has knowingly been in contact with anyone suffering from small-pox, is required to report himself at once to the medical officer of health.

The councils are authorized to use such guards and force as are necessary to remove patients or contacts to a place of isolation and to detain them there until they are lawfully discharged. The councils are required to supply drugs and other substances for the prevention and cure of small-pox and accommodation, medical nursing and other aid. They have also to undertake the disinfection of premises as required by the medical officers of health. The remainder of the regulations deal with the usual safeguards. The penalty for an offence against the regulations is fixed at not more than £20 and in the case of a continuing offence at a further daily penalty of not more than £5.

It is with regret that we have to announce the death of Dr. William Irwin, of Randwick, New South Wales, which took place on May 13, 1921.

Correspondence.

THE MALARIA DANGER.

Sir: The importance of the question of the establishment of endemic foci of malaria in New South Wales prompts me to collect the records, for the most part already published, of the occurrence of anopheline mosquitoes in New South Wales.

No opportunity has occurred for a systematic survey of the whole of New South Wales, but it was a practice always of my predecessor, Professor J. B. Cleland, to identify the mosquitoes in any district to which duty called him. This procedure I have also adopted in country trips. The opportunities thus afforded were not numerous, but nevertheless a fair, general idea of the distribution of mosquitoes in New South Wales has been obtained.

The genus *Anopheles* (*sens. lat.*) is represented in Australia by five species—two of which, *A. corethroides* Theob. and *A. (Myzorrhynchus) barbirostris* v. d. Wulf, var. *bancrofti* Giles have not been recorded from New South Wales though they occur in southern Queensland.

Two of the remaining three call for little mention. *A. (Pyretophorus) atratipes* Skuse was described from Berowra and has been recorded from south Queensland by Dr. Bancroft. We have taken it on the Hawkesbury River and at Kendall (Camden Haven). It is not an abundant species and is unlikely to prove a vector for the malaria parasite.

A. (Pyretophorus) stigmaticus Skuse was described from the Blue Mountains and has not been recorded since.

A. (Nyssorrhynchus) annulipes Walk. (= *A. musivus* Skuse = *A. mastersi* Skuse). This is our common anopheline mosquito. Described originally from Tasmania, it probably extends over the whole of Australia and the islands to the north.

The localities in New South Wales known to me in which it occurs are as follows:—Coastal districts: Murwillumbah (Cleland, May, 1916), Port Macquarie (Ferguson, July, 1919), Newcastle (Dick), Tuggerah (Cleland, October, 1914), Hawkesbury River (Cleland and Ferguson, January, 1915, October, 1914), Sydney (Skuse, Cleland, Ferguson), Port Kembla (Skuse), Camden (Ferguson, October, 1913), Picton (Ferguson, September, 1919).

Mountain ranges: Walcha (Dick), Blue Mountains (Skuse), Yerranderie (Ferguson, October, 1913).

Inland: Narrabri (Cleland, May, 1919, Dick), Pilliga Scrub (Cleland, October, 1918), Wellington (Ferguson, October, 1919), Narromine (Ferguson, June, 1913), Nevertire (Ferguson, May, 1914), Grenfell (Cleland, December, 1916), Darlington Point (Cleland), Yanco (Cleland, December, 1913, Ferguson, January, 1920, McKeown).

These records are few in number, but serve to indicate the extent of the distribution of the species and justify the conclusion that the species occurs throughout the State with the possible exceptions of the higher mountain ranges and the trans-Darling country, though even in these regions it probably occurs.

In regard to the relative abundance, the experience of both Professor Cleland and myself was that, while widespread along the coast, the species is not abundant in numbers. Inland, however, this is probably not the case, as reports and specimens we have received show that it does occur at times in large numbers.

The localities I have in mind are Grenfell, Darlington Point and Yanco, while Professor Cleland found it abundant at Overland Corner on the Murray, in South Australia.

The question of the occurrence of endemic malaria in New South Wales following on the return of infected troops from New Guinea and Palestine has been seriously considered. The conclusion came to was that, while isolated cases might occur, there was little likelihood of anything in the way of an epidemic.

This conclusion was based on (a) the relative scantiness of the anopheline mosquito in the urban areas; (b) the scattered population in the country areas, where the anophelines were more abundant.

One district—the Murrumbidgee irrigation area—suggested a possible exception and mosquito surveys showed that anophelines were breeding in that area and apparently at certain seasons in abundance. No case has, however, been

reported from the area and the policy of the Commission is to exclude settlers who are known to have suffered from the disease.

The estimation of the chances of infection in any locality is not a simple one, but as Ross (Report of the Prevention of Malaria in Mauritius, 1908, p. 31 *et. seq.*) has shown depends on the average population, the average number of infected persons, the average number of these whose blood contains enough of the sexual forms to infect anophelines, the average number of anophelines, the average number of anophelines which succeed in feeding on a single person, the average proportion of these which survive a week and the average number of survivors that succeed in biting again.

Ross's calculation (arbitrary, of course) was that only one quarter of the anophelines were likely to succeed in biting human beings; that only one-third of these were likely to survive for a week or more; and that only one-quarter of the remainder were likely to succeed in biting a second person. Hence only one in forty-eight was ever likely to give infection.

It is hoped in the future to continue the mapping out of the distribution of anopheline mosquitoes in New South Wales and to investigate places from which endemic cases have been reported. At the present season of the year little would be gained by undertaking such surveys.

I desire to thank Dr. Clayton and Dr. Utz for their courtesy in allowing me to read their paper before publication and in affording me an opportunity to examine their slides.

If medical practitioners in country districts care to submit specimens of mosquitoes, I shall be glad to undertake their identification.

Yours, etc.,

EUSTACE W. FERGUSON,

Principal Microbiologist.

Office of the Director-General of Public Health of New South Wales,
Sydney, May 9, 1921.

Sir: I was much interested in your article under the above heading in this week's issue of *The Medical Journal of Australia*, and in the reports of Dr. Clayton and Dr. Utz. They clearly indicate the necessity for keeping in mind now-a-days the possibility of malarial infection in cases of irregular fever, even in patients who have not resided in recognized malarial districts.

A few points in the pathological findings in the report are also of unusual interest. In the first case recorded, the differential count shows 2% monocytes. I am unacquainted with this nomenclature, but presume that the cells in question refer to the large mononuclear leucocytes; in which case, considering that the infection had evidently been present for about six weeks, there is an unusually low percentage of the cells which show an almost constant and marked relative increase in malarial infections. Secondly, I would refer to the presence of the "intra-corporeal chromatin bodies" in the "obscure" case mentioned. One is familiar with the degenerative changes which can sometimes be observed in malarial parasites as the result of intensive quinine treatment (with or without arsenic); nevertheless it has been my experience that the parasites in such instances can always be definitely recognized as such. In the case in question it is interesting, then, to note that the daily administration of small doses of quinine *per rectum*, together with arsenic at a later period, should suffice to so influence the infection and affect the parasites that the latter are revealed (perhaps somewhat vaguely) as "intra-corporeal chromatin bodies," with the absence of any typical forms.

Lastly, *herpes labialis* is not an uncommon accompaniment of malarial infection, whether the latter be accompanied by marked vomiting or not.

Yours, etc.,

LAURENCE H. HUGHES,

383 Glebe Point Road,
Glebe Point,
May 6, 1921.

Sir: In your leading article of May 7, 1921, reference is made to several cases of malaria in which the infection was undoubtedly received in Australia. I desire to bring to your

notice a further case which was investigated by Dr. Littlejohn at the Royal Alexandra Hospital for Children in March, 1919, and noted by me in an article in *The Medical Journal of Australia* of December 20, 1919, entitled "Anti-Malarial Work with the Australian Mounted Division in Palestine." The case was that of a child of six years from Wyong, New South Wales, who had never been outside this State and in whose blood the malarial plasmodium was found.

The occurrence of a previous case reported by Dr. Sydney Jamieson, the discovery of the anopheline mosquito in several parts of New South Wales by Dr. F. W. Taylor in 1917, combined with the return of 18,000 troops heavily infected with malaria from Palestine, roused grave apprehensions of an outbreak of malaria in Australia, particularly in the minds of those members of our profession who had seen the ravages of malaria among the troops in Palestine, and these fears I endeavoured to voice in *The Medical Journal of Australia* of December 20, 1919.

But have these forebodings been justified and is there any grave danger of a serious outbreak of malaria at present, as suggested by Dr. Clayton and your leading article of May 7, 1921?

Two summers have passed without a single case of malaria being reported until the present cases of Dr. Clayton and Dr. Doyle and even granting that some cases may have occurred and not been diagnosed, surely if the conditions in Australia were favourable to the development of malaria to any large degree, there would have been in the years following the influx of thousands of potential malaria carriers from Palestine and New Guinea more evidence of malarial infection than the occasional incidence of sporadic cases. May there not be some other factor necessary for the gross spread of malaria than the incidence of the anopheline mosquito and the malaria carrier?

Yours, etc.,

WILFRED EVANS.

Old South Head Road, Waverley,
New South Wales,
May 12, 1921.

THE VICTORIAN MENTAL HOSPITAL SERVICE.

Sir: The table of salaries paid medical superintendents in Victoria, as published in your issue of April 30, 1921, compares very unfavourably with that of New South Wales. The Medical Superintendent in New South Wales receives £200 per annum more than his confrère in Victoria. Recently the Victorian Public Service was reclassified and, as far as I can at present ascertain, every public servant received an increase of salary except the medical superintendents, the Government medical officer and the Inspector-General of Insane. The increased cost of living was the reason given for the reclassification. It is very curious to note how differently this factor affected various individuals. Members of Parliament and Ministers of the Crown were affected to the extent of £200 per annum, the Director of Education and the Public Service Commissioner were found to be suffering to the extent of £250 per annum, whilst it was necessary to alleviate the difficulties of many high-grade officials by adding £100 per annum to their salaries; but by some miraculous dispensation of Providence the lessened purchasing power of money does not seem to have affected medical superintendents, who were therefore left exactly as they have been for many years past. It follows that those in authority consider the superintendents either to be overpaid or incompetent. The knowledge that increments were recommended for us, but were vetoed by the Ministers has greatly increased my already high opinion of the transcendental abilities and scrupulous fairness of these gentlemen. The recent lodge dispute, which showed the sympathy of certain members of the Cabinet towards the medical profession generally, is not for one moment thought to have influenced their decision and the smart of their ignominious defeat has no doubt been long since assuaged by the tender hand of Time.

Yet it were wise to point out to the younger members of our profession that, under present conditions and after a long climb to the top, the medical superintendent finds himself contemptuously assessed among glorified clerks and

others of like abilities. He finds it requires some years to acquire and apply the special knowledge demanded of him. As you say, "it requires expert knowledge and prolonged experience to be able to determine when a person who has been insane, may be released without danger." Treatment of these patients demands an intimate knowledge of psychotherapy, including hypnotism, suggestion, psycho-analysis, etc., and no greater responsibility can be placed on anyone than the decision which determines a man's liberty of freedom of action. Recent happenings in New South Wales have drawn attention to the responsibilities imposed on mental specialists and superintendents of insane hospitals. In England these things are recognized and superintendents are paid up to £1,500 per annum. The Stafford Mental Hospital recently advertised for a senior medical officer at £850 or £900 per annum, according to his attainments. It is not too much to ask £1,000 per annum and allowances for medical superintendents and the Association should agitate for this salary in all the States.

In the meantime, I would strongly advise those with a bent towards this specialty to consider carefully whether the Victorian Government and others are offering an adequate inducement to enter their services. Unless they are entirely swayed by their art and consider their emoluments a secondary consideration, disappointment, with its attendant regrets, awaits them. The Victorian Government, in particular, is far from being an ideal employer and when its Ministers allow their personal feelings to determine their actions, impartial treatment cannot be expected; without this the present system must be irksome, irritating, unfair and sometimes depressing.

Yours, etc.,

"A VICTORIAN MEDICAL SUPERINTENDENT."

May 5, 1921.

MODERN MIDWIFERY PRACTICE.

Sir: A remark of Dr. Brett in your issue of May 7, 1921, p. 393, viz., "the more reliable methods of inserting bougies or packing . . . would surely not have been as exhausting to the patient as having Cæsarean section performed after she had got much worse," raises the very interesting point as to whether Cæsarean section performed under modern conditions is as drastic as generally believed. A case highly instructive in this regard was a patient under my care at the Women's Hospital, Melbourne, about 1917 (I write from memory). This patient was very distressed owing to a failing heart, was full time and (for a reason which I have never been able to definitely determine) her temperature rose steadily until the nurse reported 111° F. (which is in the region of the highest recorded temperature in man). As the woman was obviously dying, I decided to induce labour as the woman's only chance lay in emptying the uterus, and giving the embarrassed heart a chance. The resident M.O.'s declined to administer an anæsthetic (such is the fear the Coroner's Court apparently inspires) and as I considered any dilatation of the cervix inadvisable, since the least movement completely exhausted her, I performed Cæsarean section under stovaine. As soon as the uterus was emptied, the patient's colour altered at once and the respiratory distress disappeared. About half an hour after the operation she was sitting propped up in bed having a cup of tea and feeling very comfortable. The temperature came down and about three weeks later the patient was discharged from hospital. I consider that if there is sufficient anæsthesia to get through the abdominal parietes and a minimum of dragging on the uterus or appendages, there should be very little shock in Cæsarean section. I feel sure that dilatation of the cervix, even if slowly performed, with subsequently delivery *per vaginam*, would have killed this patient.

Yours, etc.,

J. LEON JONA.

Melbourne, May 10, 1921.

We regret to announce the death of Dr. William Macanish, of Brighton, Victoria, which took place on May 15, 1921, after an illness of several weeks' duration.

The Librarian of the New South Wales Branch of the British Medical Association will be obliged if members who have removed any of the following journals from the Library of the Branch, will return them without delay. The missing numbers are required to complete the sets for binding.

The Journal of the American Medical Association—

1917: Vol. 68, April 7.

1918: Vol. 71, August 24.

1919: Vol. 72, June 7.

1920: Vol. 74, March 6 and 27, May 15 and 22, June 26.

Journal of the Royal Army Medical Corps—

1919: Vol. 32, April.

Dublin Journal of Medical Science—

1917: August, September, October.

1918: February, March, April, October, November.

1919: March, April.

Journal of Experimental Medicine—

1918: July, August, September, December.

Edinburgh Medical Journal—

1917: March.

Johns Hopkins Hospital Bulletin—

1916: March, April, September.

1919: September, October, November.

1920: June, July, August.

Journal of Medical Research—

Volumes 35, 36, 37.

The Practitioner—

1915: May, October, December.

1919: January.

Annals of Surgery—

1917: May.

Medical Appointments.

During the absence on leave of Dr. C. W. Reid (B.M.A.), Dr. P. W. Mitchell (B.M.A.) has been appointed Acting Chief Quarantine Officer (General) for New South Wales.

Dr. Winifred E. Kennan (B.M.A.) has been appointed Medical Superintendent of the Queen Victoria Hospital, Victoria.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxiii.

The Royal Society of Medicine, London: Nichols Prize.

Alfred Hospital, Melbourne: Medical Superintendent.

Sydney Hospital: Honorary Relieving Assistant Surgeon.

Hospital for Sick Children, Brisbane: Resident Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C..

Branch.	APPOINTMENTS.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Institutes or Medical Dispensaries. Manchester Unity Independent Order of Oddfellows. Ancient Order of Foresters. Hibernian Australian Catholic Benefit Society. Grand United Order of Free Gardeners. Sons of Temperance. Order of St. Andrew. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

May 24.—N.S.W. Branch, B.M.A.; Medical Politics Committee; Organization and Science Committee.
May 25.—Vic. Branch, B.M.A., Council.
May 26.—S. Aust. Branch, B.M.A..
May 26.—Clinical Meeting at the Hospital for Sick Children, Brisbane.
May 27.—N.S.W. Branch, B.M.A..
May 27.—Q. Branch, B.M.A., Council.
June 1.—Vic. Branch, B.M.A..
June 3.—Q. Branch, B.M.A..
June 8.—Melb. Paediatric Society (Vic.).
June 10.—N.S.W. Branch, B.M.A., Clinical.
June 10.—Q. Branch, B.M.A., Council.
June 10.—S. Aust. Branch, B.M.A., Council.
June 14.—N.S.W. Branch, B.M.A., Ethics Committee.
June 14.—Tas. Branch, B.M.A..
June 15.—W. Aust. Branch, B.M.A..

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.
Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.
All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney. (Telephone: B. 4655.)